ENVIRONMENTAL CHECKLIST

I. BACKGROUND

1. Project Title: OPDE Solar Farm Conditional Use Permit No. 10-03

2. Lead Agency Name and Address: City of West Sacramento
Community Development Department
1110 West Capitol Avenue
West Sacramento, CA 95691

3. Contact Person and Phone Number: David W. Tilley, Senior Planner
916-617-4645
davidt@cityofwestsacramento.org

4. Project Location: Four interconnected sites adjacent to and east of the Deep Water Ship Channel navigation levee. Sites 1 and 2 are wholly located within the City of West Sacramento. Site 3 overlaps the City limits with unincorporated Yolo County. Site 4 is located wholly within unincorporated Yolo County (see attached vicinity map). Sites 1 and 4 would be ±35 acres each; Sites 2 and 3 would be ±36 acres each. A proposed borrow site would also be located within unincorporated Yolo County south of Site 4 and an existing tree conservation area.

5. Project Sponsor's Name and Address: OPDE U.S. Corp.
1430 Enterprise Blvd.
West Sacramento, CA 95691

6. General Plan Designation: Agriculture (AG)- City of West Sacramento General Plan/Yolo County General Plan

7. Zoning: Agriculture General (A-1) – City of West Sacramento Zoning Map/Yolo County Zoning Map.

8. Description of Project (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets, if necessary.): The project consists of a 24 megawatt solar power plant to be located adjacent to and east of the Deep Water Ship Channel navigation levee on land leased from the Port of West Sacramento. Approximately 1,920 single axis trackers would be installed over four sites. Each tracker would have approximate dimensions of 23 feet by 46 feet with a maximum height of ±15 feet. Each tracker would be mounted on a concrete base. Fill is proposed to bring each site up to a 27-foot elevation. The sites would be interconnected via overhead power lines with each site individually connected via underground conduit. The new overhead power lines would connect to existing overhead lines north of the project site that cross the Deep Water Ship Channel and tie into an existing PG&E substation located at 3000 Ramco St.

9. Surrounding Land Uses and Setting (briefly describe the project's surroundings): The solar arrays will be constructed on the levee benches that separate the Deep Water Ship Channel

and the toe drain, which separates the levee from the Yolo Bypass. These areas are currently used for stockpiling and drying dredged spoil material associated with on-going shipping channel maintenance and deepening operations. Rotating herds of grazing livestock (primarily cattle and goats) are used for vegetation management and weed abatement on these levees. Two sections along the alignment are dedicated tree conservation easement and mitigation preserve areas.

10. Other Public Agencies Whose Approval is Required (*e.g.,* permits, financing approval, or participation agreement): Yolo County, Port of West Sacramento, US Army Corps of Engineers, Central Valley Flood Protection Board, PG&E

II. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	

III. DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR OR NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature — Date: 6-2-10

David W. Tilley
Printed Name

City of West Sacramento
For

IV. ENVIRONMENTAL CHECKLIST

Introduction

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant With Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
1. AESTHETICS. *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

a. - b. There are no designated scenic vistas or scenic resources within a State scenic highway in the vicinity of the proposed project. Therefore, the proposed project would not affect views to or from a scenic vista or a State scenic highway, and there would be ***no impact***.

c. The proposed trackers would be placed on land adjacent to and east of the Deep Water Ship Channel (DWSC) navigation levee at a typical elevation of 27 feet after fill from dredge spoils is placed on the site. The top of the levee is at about 32 feet. The maximum height of the tracker when at a 40 degree angle is approximately 15.7 feet. When at a 20 degree angle, the maximum height would be approximately 11.3 feet. The nearest residential receivers are located in the Bridgeway Island and Bridgeway Lakes neighborhoods approximately 1,400 feet away at the closest point. These homes are east of the DWSC levee with building pad elevations between 12 and 14 feet. The top of levee is approximately 30-feet, meaning that even with two story homes views across the DWSC are limited. It is unlikely that the trackers and overhead power lines would be visible other than from the top of the east levee. Thus impacts to visual character would be ***less than significant.***

d. The proposed trackers would not be illuminated and are designed to absorb sunlight rather than reflect it, thus not creating glare impacts on nearby residences or airplanes flying overhead to Sacramento International Airport. ***No impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
2. AGRICULTURE RESOURCES: *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program in the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion

a. - c. The project site is designated as Urban and Built-Up Land by the California Department of Conservation.[1] There are no agricultural uses currently on the project site or within the immediate vicinity of the project site, and the site is not under a Williamson Act contract. The site does not contain any farmland, agricultural resources, or operations that could be affected by the project. Construction and operation of the proposed project would not cause changes in the existing environment that would convert agricultural land to non-agricultural uses. Therefore, ***no impact*** would occur.

1 California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, GIS Data, 2008.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
3. AIR QUALITY. *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Background

The project lies at the southern end of the Sacramento Valley, a broad, flat valley bounded by the coastal ranges to the west and the Sierra Nevada to the east. A sea level gap in the Coast Range (the Carquinez Strait) is located approximately 50 miles southwest, and the intervening terrain is very flat. The prevailing wind direction is southwesterly, which occurs when marine breezes flow through the Carquinez Strait. Marine breezes dominate during the spring and summer months, and show strong daily variations. Highest average wind speeds occur in the afternoon and evening hours; lightest winds occur in the night and morning hours. During fall and winter, when the sea breeze diminishes, northerly winds occur more frequently, but southwesterly winds still predominate.

The project is within the Yolo-Solano Air Quality Management District (YSAQMD), which is part of the Sacramento Valley Air Basin (SVAB). The SVAB has been further divided into Planning Areas called the Northern Sacramento Valley Air Basin (NSVAB) and the Greater Sacramento Air region, designated by the U.S. Environmental Protection Agency (EPA) as the Sacramento Federal Ozone non-attainment area. The non-attainment area consists of all of Sacramento and Yolo counties and parts of El Dorado, Solano, Placer, and Sutter counties.

The San Francisco Bay Area Air Basin lies to the west, and the San Joaquin Valley Air Basin is located to the south. Considerable transport of pollutants occurs between these air basins, so that air quality in the SVAB is partially determined by the release of pollutants elsewhere. In turn, pollutants generated within the SVAB affect air quality in areas to the north and east.

The Federal Clean Air Act (FCAA) requires states to classify basins (or portions thereof) as either "attainment," "non-attainment," or "unclassified" based on whether or not the National Ambient Air Quality Standards (NAAQS) had been achieved, with respect to the criteria air pollutants and applicable standards, and to prepare air quality plans containing emission reduction strategies for those areas designated as "non-attainment." An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "non-attainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that the data does not support either an attainment or a non-attainment status. The California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The SVAB is classified as a "severe" non-attainment area for the federal one-hour ozone standard, and is also currently designated as "serious" non-attainment for the federal PM_{10} standard. The SVAB is considered as an "unclassified" attainment area for CO under federal standards, and attainment under State standards.

Ambient Air Quality Standards

Both the EPA and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. The ambient air quality standards are levels of contaminants that represent safe levels, which avoid specific adverse health effects associated with each pollutant. The ambient air quality standards identify "criteria" pollutants, so-named because the health and other effects of each pollutant are described in criteria documents. The federal and State ambient air quality standards are summarized in Table 1 for important pollutants. The federal and State ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and State standards differ in some cases. In general, the California standards are more stringent, particularly for ozone and particulate matter (PM_{10} and $PM_{2.5}$).

Appendix G of the CEQA Guidelines (Title 14 CCR 15000 *et seq.)* indicates that the significance criteria established by the applicable air quality management or air pollution control district can be relied on to make significance determinations regarding air quality. Included in the YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (YSAQMD, 2007) are quantitative significance thresholds of 10 tons per year for ROG and NO_X and 80 pounds per day for PM_{10}.

ROG, NO_X, and PM_{10} emissions that would be created by construction and operation of the proposed project were determined using URBEMIS-2007 Version 9.2.4.

Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	-- 0.075 ppm	0.09 ppm 0.07 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m^3	20 ug/m^3 50 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean 24 Hour	12 ug/m^3 -	15 ug/m^3 35 ug/m^3

Note: ppm = parts per million; ug/m^3 = Micrograms per Cubic Meter

Source: California Air Resources Board, 2010.

Discussion

a. The California Clean Air Act (CCAA) of 1988 requires areas not attaining State air quality standards to achieve and maintain the State ambient air quality standards by the earliest practicable date. Air Districts designated non-attainment for all must prepare an attainment plan (California Health and Safety Code §40911). In 1992, the YSAQMD prepared an Air Quality Attainment Plan (AQAP) to address the non-attainment status for ozone. According to the YSAQMD, "the 1992 AQAP was designed to make expeditious progress toward attaining the state ozone standard and contained preliminary implementation schedules for control programs on stationary sources, transportation, and indirect sources, and a vehicle/fuels program."[2]

In addition, the CCAA requires that once every three years districts assess their progress toward attaining the air quality standards. The YSAQMD prepared the Triennial Assessment and Plan Update (2003) in order to "[…] report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three year period."

Operation of the proposed project would not generate any new emissions of criteria air pollutants; therefore, the project would not conflict with, or obstruct implementation of, any applicable air quality management plans, including the CCAA, the AQAP, or the Triennial Assessment and Plan Update. Because the proposed project would generate renewable electricity and would avoid 34,472 metric ton equivalent (MTE) of CO_2 emissions (see the Greenhouse Gas Emissions section of this IS/MND for further detail), the project could improve air quality in the region. Therefore, ***no impact*** would result.

b, c. The proposed project would include the construction of four 6,000 kW, grid-paralleled, photovoltaic, solar electric generating systems adjacent to the Port of West Sacramento's Deep Water Ship Channel (DWSC). The solar arrays would be constructed east of and adjacent to the DWSC west navigation levee, which is currently used for the following: (1) storing and drying dredge material from channel maintenance and deepening operations; and (2) grazing. Both of these activities would continue following project construction.

During construction, the operation of equipment and vehicles used for construction would emit reactive organic gases (ROG) and nitrogen oxides (NO_X), as well as carbon monoxide (CO) and particulate matter (PM_{10} and $PM_{2.5}$). These emissions would affect both local and regional air quality. Without control measures, grading and construction activities associated with implementation of the project, although temporary in nature, could cause both nuisance and health air quality impacts to the residential development approximately one-quarter mile to the east.

Construction of the project would take approximately 12 months and would be divided into the following phases:

1. Roads and pads;
2. Foundations;
3. Electrical infrastructure;
4. Tracker assembly and installation;
5. Substation interconnection;
6. Electrical system upgrades;

[2] Yolo-Solano Air Quality Management District website, http://ysaqmd.omsoft.com/state-plans.php, accessed March 23, 2010.

7. Commissioning; and
8. Project finalization.

Construction of the project site would proceed as follows: 1) mass site grading, during which the site would be mass-graded and soil hauling from a borrow site (see "Grading" below); 2) fine site grading, during which the platforms and trackers would be delivered to the site; and 3) assembly and installation of the trackers. Required construction equipment would include an excavator, a sheep's foot compactor, a small (five-ton) crane, a trencher, a concrete delivery truck, a water truck, and associated utility vehicles.

Grading: Each of the project's approximately 600-foot by 3,000-foot earthen foundation pads would be graded and compacted to 90 percent prior to equipment installation to match the existing levee elevation. All soils for the foundation pads would be borrowed from other, nearby dredge-material deposition areas, from which no more than ten feet of soil will be removed to build up the foundation pads.

Soil and Material Hauling: During construction, one concrete delivery would occur per tracker, for a total of 1,944 total truckloads. Equipment delivery to the site would require approximately one truckload for every four trackers (or 480 total truckloads). In addition, site grading would require soil import of approximately 420,000 cubic yards from the borrow site.

Construction Emissions: Maximum construction emissions would occur during the first phases of construction when clearing, earthmoving, and grading occur. Table 2 shows expected maximum daily construction emissions for the project without the incorporation of mitigation.

Table 2
Maximum Construction Emissions

Pollutant	Project Emissions (Unmitigated)	YSAQMD Significance Threshold
ROG	1.34 (tons/year)	10.0 (tons/year)
NO_X	10.68 (tons/year)	10.0 (tons/year)
PM_{10}	806.75 (lbs/day)	80.0 (lbs/day)

Source: URBEMIS-2007 (Version 9.3.4), March 2010.

As shown in Table 2, NO_X and PM_{10} emissions generated by the project would exceed the YSAQMD thresholds, while ROG emissions would not. It should be noted that particulate matter emitted during construction activities would not occur immediately adjacent to any existing residences or other sensitive receptors.

Toxic Air Contaminants: The majority of the PM_{10} from construction would be soil particles, while a small fraction of the PM_{10} would be from diesel exhaust (during construction, various diesel-powered vehicles and equipment would be used on the site). Diesel exhaust particulate is a pollutant that has come under increased scrutiny in recent years.

In 1998, CARB identified particulate matter from diesel engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[3] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck-stops) were identified as having the highest associated risk. In terms of the project, the diesel-powered vehicles and equipment used during the construction of the project could generate TACs. However, health risks from TACs are a function of both concentration and

[3] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

duration of exposure, and the YSAQMD does not have permitting authority over mobile sources of TACs. Therefore, a standard of significance has not been established for mobile source emissions of TACs.

The CARB document *Air Quality and Land Use Handbook: A Community Health Perspective*[4] indicates that the operation of diesel trucks shall not occur at a distance closer than 1,000 feet from existing sensitive receptors. The sensitive receptors that are closest to the proposed project site are the residences located one-quarter of a mile away. These residences are more than 1,000 feet away from the project site. Furthermore, as discussed above, health risks from TACs are associated with prolonged exposure to TACs. Because the diesel-powered vehicles would be operating more than 1,000 feet away from existing sensitive receptors and because these activities would be temporary in duration, adverse impacts associated with TACs would not be expected to result.

Project Operation: As determined by URBEMIS-2007, operation of the four 6,000 kW, grid-paralleled, photovoltaic, solar electric generating systems would not generate any new emissions of criteria pollutants. Therefore, operation of the proposed project would not result in any adverse air quality impacts.

Conclusion: Construction emissions are temporary, affecting an area for a period of days or perhaps weeks. However, because the proposed project would exceed the YSAQMD's established standards of significance for NO_X and PM_{10} emissions, a ***potentially significant*** impact would result.

Implementation of the following mitigation measures would reduce emissions of NO_X to approximately 9.42 tons per year and emissions of PM_{10} to approximately 55.05 pounds per day. Therefore, with implementation of these mitigation measures, the above impact would be reduced to a ***less-than-significant*** level.

Mitigation Measure No. AQ-1

Prior to commencement of any ground disturbing activities, the applicant shall submit a dust control plan to the City Engineer and the Yolo-Solano Air Quality Management District. This plan shall ensure that adequate dust controls are implemented during all phases of project construction. The YSAQMD best available control measures for fugitive dust shall include, but not be limited to, the following:

- *Apply nontoxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas inactive for ten days or more);*
- *Reestablish ground cover in disturbed areas quickly;*
- *Water recently disturbed construction areas (ground disturbed within 10 days) three times daily to avoid visible dust plumes;*
- *Apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites;*
- *Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);*
- *Enforce a speed limit of 15 MPH for equipment and vehicles operated in unpaved areas;*

[4] California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

- *All vehicles hauling dirt, sand, soil, or other loose materials shall be covered or should maintain at least two feet of freeboard; and*
- *Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads.*

Mitigation Measure No. AQ-2

The project developer shall be responsible for ensuring that contractors reduce ROG, NO_X, and CO emissions by complying with the construction vehicle air pollutant control strategies developed by the YSAQMD. Construction contracts shall include the following requirements:

- *Construction equipment operators shall shut off equipment when not in use to avoid unnecessary idling. As a general rule, vehicle idling should be kept below five minutes.*
- *During grading of each site, all on-site diesel–powered equipment, including excavators, graders, rubber tired dozers, scrapers, tractors/loaders/backhoes, and water trucks shall use only aqueous diesel fuel.*
- *Construction equipment shall be properly maintained and in good operating condition.*
- *During smog season (May through October), the construction period shall be lengthened from 7 a.m. to 7p.m. to minimize the number of vehicles and equipment operating at the same time.*
- *Contractors shall utilize new technologies to control ozone precursor emissions as they become available and feasible.*

d, e. The proposed project consists of the construction and operation of solar electric generating systems. In addition, as discussed above, sensitive receptors do not exist in the immediate vicinity of the project site. The construction and operation of the solar electric generating systems would not create any objectionable odors or expose sensitive receptors to substantial pollutants; therefore, ***no impact*** would result.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4. BIOLOGICAL RESOURCES. *Would the project:*				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Background

Information in this section is based a review of the most recent versions of the California Department of Fish and Game's (CDFG) *California Natural Diversity Database, RareFind 3 application* (CNDDB, 2010) in order to evaluate the potential for presence/absence of biological resources in the Project Area. This document review was followed by reconnaissance-level field surveys conducted on January 14 and 27, and February 8, 2010 by the applicant's biologist in order to specifically identify existing biological resources in the project area that could potentially be affected by implementing the proposed project.

The solar arrays will be constructed on the levee benches that are currently used for stockpiling and drying dredged spoil material associated with on-going shipping channel maintenance and deepening operations. Rotating herds of grazing livestock (primarily cattle and goats) are used for vegetation management and weed abatement on these levees. Two sections along the alignment are dedicated tree conservation easement and mitigation preserve areas and will not be adversely affected by the proposed project. Foundation fill material will be obtained from an active dredge stockpile ("borrow area") at the far southern end of the proposed project alignment.

The entire project alignment is approximately 25 feet above mean sea level. The proposed project will be built east of and adjacent to the Deep Water Ship Channel (DWSC) west navigation levee. As the levees were engineered to convey and contain river overflows during flood events, the eastern side of the levee (in cross-section) typically has a raised berm between the existing floodplain of the DWSC. The height of this berm varies throughout the proposed project alignment, but is typically steep and over 20 feet in height in some locations. The distance between the western edge of the bank of the DWSC to the crown of the berm varies in horizontal distance, but varies from as narrow as 60 feet to as wide as 227 feet. On the western side of the levee (i.e., the side facing west towards the Yolo Bypass), the aspect of the slope is moderately steep (at approximately a 40 - 45 degree angle throughout). The horizontal distance between the eastern edge of the toe drain to the western edge of the levee crown (defined by the existing gravel access road) is generally more uniform, and ranges from as narrow as 110 feet to as wide as 270 feet. Table 3 presents approximate distances measured on both sides of the levee at respective landmark locations along the proposed project alignment:

TABLE 3

Representative Widths of Eastern (*Sacramento River Deep Water Ship Channel*) Levee Berms and Western (*Yolo Bypass Toe Drain*) Levee Crowns

Crown Width	Location (approximate)	Berm Width
119'	Northern end of Site 1	179"
125'	Southern end of Site 2	151'
138'	Northern end of Site 3	141'
142'	Southern end of Site 4	152'
270'	*Deep Water Station*	169'
116'	Northern end of Borrow Area	200'

The entire project would be constructed adjacent to and east of the DWSC navigation levee, which separates the DWSC from the toe drain of the Yolo Bypass. The Yolo Bypass Wildlife Area consists of approximately 16,770 acres of managed wildlife habitat and agricultural land. Most of the Yolo Bypass is seasonally inundated and contains a rich mosaic of wetlands (e.g., tule and cattail marsh, willow

scrub, seasonal wetland) that provides rich habitat diversity for year-round and migratory wildlife species. There is extensive suburban residential development in the Southport area of West Sacramento, east of the DWSC near the northern half of the proposed alignment, while open space (consisting primarily of agricultural lands) occurs in the southern half. While stands of emergent marsh and willow scrub vegetation occur on both sides of the DWSC, most of these areas appear to be continuously disturbed by wave attenuation (from boat traffic), leading to shoreline erosion and bank slumping along the ordinary high water mark (OHWM).

Analysis Methods: In evaluating the extant vegetation communities, wildlife habitats, and special-status (*i.e.,* rare, threatened, or endangered) species within the project area, the applicant's biologist first queried the most recent versions of the California Department of Fish and Game's (CDFG) California Natural Diversity Database, RareFind 3 application (CNDDB, 2010) to evaluate the potential for presence/absence of these resources. The applicant's biologist then conducted reconnaissance-level field surveys of the entire project area between January 14 and February 8, 2010.

Vegetation TYPES and Associated Wildlife Habitats: The biological study is based a classification of vegetation assemblages occurring along the proposed project alignment on A Manual of California Vegetation (MCV; Sawyer, Keeler-Wolf, and Evens, 2009). This classification system provides a systematic and standardized approach and is based on species dominance (known as an Alliance) as determined by their relative cover within a particular stand of plants. This classification is also hierarchical in nature: Alliances are the generic vegetation unit and Associations the specific unit. Alliances also reflect regional to subregional climates, substrates, hydrology, and disturbance regimes (Jennings et al. 2006; FGDC 2008).

In addition to *Alliances* (none of which are defined by non-natives), MCV recognizes *Semi-natural* and *Special Stands*, which are specific patches of vegetation in the landscape that are unique from other patches, which may appear structurally distinctive as well as rare, and may be strongly dominated by non-native plants that have become naturalized in the state. These are usually defined by the presence of locally-dominant, but globally or regionally rare plant taxa, including plants on the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* or the Department's *Special Plants List* (CDFG 2009).

*Avena (*wild oats grasslands*), Brassica* and Other Mustards (upland mustards), *Centaurea* (yellow star-thistle fields), and *Lepidium latifolium* (perennial pepper weed patches) *Semi-Natural Herbaceous Stands:* These various vegetative assemblages that form the dominant herbaceous groundcover throughout the entire project alignment and occur on the open slopes, berms, and benched terraces of the levee, represent an aggregate mosaic of non-native annual and biennial invasive species that typically persist in areas undergoing periodic disturbance (e.g., grading, grazing, plowing, spraying). Dominant plant species observed in these areas include wild oat (*Avena fatua*), rip-gut brome (*Bromus diandrus*), yellow star-thistle (*Centaurea solstitialis*), black mustard (*Brassica nigra*), filarees (*Erodium* spp.), and clovers (*Trifolium* spp.). More recently disturbed areas contain nearly pure stands of perennial pepper weed (*Lepidium latifolium*), milk thistle (*Silybum marianum*), and wild radish (*Raphanus sativus*).

Wildlife species observed or detected within these areas include: valley garter snake (*Thamnophis sirtalis fitchi*), savannah sparrow (*Passerculus sandwichensis*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), western meadowlark (*Sturnella neglecta*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferous*), ring-necked pheasant (*Phasianus colchicus*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), coyote (*Canis latrans*), black-

tailed hare (*Lepus californicus*), striped skunk (*Mephitis mephitis*), and California ground squirrel (*Spermophilus beecheyi*).

Salix gooddingii-Populus fremontii Association: This mixed tree-canopy association occurs primarily in the southern half of the project alignment and is dominated by even-aged stands of black willow (*Salix gooddingii*) and Fremont's cottonwood (*Populus fremontii*)[5]. Due to grazing and continued disturbances associated with ongoing dredging activities in the DWSC, these stands lack a shrub and/or liana layer generally associated with higher-quality riparian habitats; the herbaceous understory within these areas is highly degraded and is generally dominated by many of the same non-native species described in the previous section.

Wildlife species observed or detected within these communities during the 2010 mid-winter field surveys included oriole (*Icterus* sp.; nest), ruby-crowned kinglet (*Regulus calendula*), downy woodpecker (*Picoides pubescens*), American robin (*Turdus migratorius*), northern flicker (*Colaptes auratus*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus)*.

Special Status Species: For the purposes of this initial study, special-status species include species that are:

- listed, proposed, or candidate species for listing as Threatened or Endangered by the United States Fish and Wildlife Service (USFWS) pursuant to the Federal Endangered Species Act (FESA) of 1973, as amended;
- designated as Species of Concern by the USFWS (note: although this status designation does not itself trigger any FESA requirements, many of the species that have this designation meet the definition of rare, threatened or endangered under CEQA);
- listed as Rare, Threatened, or Endangered by CDFG pursuant to the California Endangered Species Act (CESA) of 1973, as amended;
- designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code;
- designated by the CDFG as California Species of Special Concern;
- plants listed as Category 1B or 2 by the California Native Plant Society (CNPS); and
- not currently protected by statute or regulation, but considered rare, threatened or endangered under CEQA (Section 15380).

The California Natural Diversity Database (CNDDB Rarefind 2, 2010), the U.S. Fish & Wildlife Service's *List of Federal Endangered and Threatened Species* (electronically accessed January 2010), and the California Native Plant Society's (CNPS) electronic *Online Inventory of Rare and Endangered Plants* (electronically accessed January 2010) were queried to determine if any State and federally listed endangered or threatened species or habitats occur within the project area. The CNDDB, USFWS, and CNPS listed a total of 19 special-status species and two sensitive community types within the Sacramento West 7.5' USGS topographic quadrangle.

Known occurrences of burrowing owl (*Athene cunicularia*) exist within the project area, along with potentially suitable nesting habitat for Swainson's hawk (*Buteo swainsoni*), and aquatic habitat for the giant garter snake (*Thamnophis gigas*) in the adjacent DWSC and Yolo Bypass toe drain. Regular dredge-spoil deposition and removal and annual livestock grazing within these levee benches has

5 The tree conservation area between Sites 2 and 3 exhibits a greater diversity of woody species, due to mitigation plantings of Fremont's cottonwood, valley oak (*Quercus lobata*), blue elderberry (*Sambucus mexicana*), and coyote brush (*Baccharis pilularis*).

precluded the establishment of suitable habitat for the remaining special-status animals listed by the CNDDB, USFWS, and CNPS queries. Consequently, these species are not addressed further in this initial study.

Special Status Wildlife

The following discussions describe the special status wildlife species that may exist in the project area and may be affected by the project.

Swainson's hawk (*Buteo swainsoni*): Swainson's hawks are a California Threatened species and federal species of concern found throughout the Central Valley where suitable nesting and foraging habitat is available. Swainson's hawks have a strong preference for agricultural habitats and for the prey that inhabit alfalfa (Woodbridge 1991, Babcock 1995) with some individuals in the Sacramento Valley hunting as much as 22.5 km from the nest site (Babcock 1995). In Yolo County, the species is distributed throughout the low elevation agricultural region east of the Interior Coast Range. Closely associated with agricultural cover type, the distribution of the species generally follows the pattern of hay, grain, and row crops. The majority of nesting pairs occur from several miles north of Woodland south to Putah Creek, and east to the Sacramento River. Fewer pairs occur in the predominantly rice growing region in the northeastern portion of the county, in the orchard region in the northwest and southwest portions of the county, and the wetland-dominated areas of the southern panhandle. The highest nesting concentrations are north of Woodland to County Road 12, along oak and cottonwood-dominated riparian corridors such as Willow Slough, Putah Creek, and the Sacramento River, and between Davis and Woodland, and west to approximately Interstate 505 and east to the Sacramento River (Estep Environmental Consulting 2008). Yolo County Swainson's hawks tend to nest in trees closest to the major rivers and active agricultural areas. Swainson's hawks often nest within, or on the edge of riparian areas adjacent to suitable foraging habitat, as well as in large single or stands of trees in agricultural fields. They are open-country birds that forage in large, open grasslands and agricultural fields, especially after the fields have been disked or harvested. Ultimately, the availability of nesting trees, such as large oaks, within suitable foraging areas may limit Swainson's hawk nesting distribution.

The proposed project calls for installation of photovoltaic arrays on the narrow dredge stockpile areas on the levee benches between the DWSC and the Yolo Bypass toe drain. These dredge stockpile areas provide only marginal foraging habitat for the Swainson's hawk, which prefers to forage in the much richer agricultural fields and wetlands of the adjacent Yolo Bypass to the west. Several possible raptor nests (i.e., stick nests of various size) were, however, detected along the proposed project alignment, though it is unlikely that the existing even-aged stands of young cottonwoods and willows are of a suitable age and size class to support Swainson's hawks, which typically nest in older trees (*e.g*. over 30 years old) in this area (*Yolo County NCCP/HCP Science Advisors Report, March 2006*).

Giant garter snake (*Thamnophis gigas*): The GGS is a federal and state threatened species with a presently known distribution from the vicinity of Gridley in Butte County, to the vicinity of Burrel in Fresno County (CDFG 1989). The species and its supporting habitat are depleted throughout its remaining range (CDFG 1989). The GGS is one of the most aquatic of garter snakes and is usually found in streams, marshes, and sloughs with mud bottoms (Stebbins 1985). It also occurs in drainage canals and irrigation ditches (CDFG 1989). GGS habitat includes marshes, sloughs, ponds, small lakes, low gradient streams, other waterways and agricultural wetlands such as irrigation and drainage canals, rice fields and the adjacent uplands. Essential habitat components consist of (1) adequate water (either permanent aquatic habitat, or seasonally flooded during the snake's active season, early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; (3) upland habitat, including grassy banks, for basking, cover and retreat sites; and (4) higher elevations uplands for

cover and retreat sites during the snake's active season and refuge from flood waters during the dormant season. GGS are typically absent from larger rivers and other water bodies that support introduced populations of large predatory fish, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of GGS prey.

GGS have fairly specific habitat requirements that are compatible with certain agricultural practices, such as rice farming, but are incompatible with a number of human uses, including recreation, flood control, and even winter waterfowl management. Because they are aquatic hunters, they must have permanent, though not necessarily extensive, water. Flooding destroys winter hibernacula (chambers above the highest flood level used for hibernation); the GGS must have a protected, non flooding upland site in which to overwinter. GGS are not greatly benefitted by tree and shrub cover on banks; on the contrary, they require banks covered with vegetation and high grass as cover against predators (e.g., notably egrets, herons, and northern harriers that are plentiful in the Valley) on which to bask and from which to dive when alarmed. When disturbed by human activity, they will move great distances, possibly out of areas set aside for their protection. All of these factors may contribute to the current rarity of this species. (*SOURCE: Joaquin County Multi-Species Habitat Conservation and Open Space Plan, Section 5.2.4.8 Giant Garter Snake, SJCOG, Inc., 555 E. Weber Ave, Stockton, CA 95202, (209) 468-3913, www.sjcog.org/habitat, accessed December 7, 2009*).

The northern Yolo Basin giant garter snake population occurs along the northeastern edge of the Yolo Basin near the Sacramento River. The historical distribution of giant garter snakes in Yolo County is unclear; however, with the majority of sightings made only in recent decades (Hansen 1986, CNDDB 2007). Giant garter snakes are documented in two distinct concentrations along the eastern edge of Yolo County (CNDDB 2007; Hansen in litt. 2005, 2006, 2007; Wylie et al. 2004, 2005, 2006). The first concentration lies in the northeastern portion of Yolo County, northwest of Knights Landing and in the southern end of the Colusa Basin near Sycamore Slough and the Colusa Basin Drainage Canal. The second concentration lies in the east- central portion of Yolo County, with records in the Yolo Bypass east of Conaway Ranch near the Tule Canal, the Willow Slough/ Willow Slough Bypass from Conaway Ranch south to the Yolo Wildlife Area, the Davis Wetlands complex south of Conaway Ranch between the Willow Slough Bypass and the Yolo Bypass, the Yolo Wildlife Area along the east edge of the Yolo Bypass west levee, and the adjacent ricelands west of the Yolo Wildlife Area. Queries of the online databases of the California Academy of Sciences (2008) and Museum of Vertebrate Zoology (2008) yielded one additional occurrence record (CAS 178594) in downtown Davis: However, the stated location for this record (a frontage road one mile east of the Yolo Causeway) conflicts with the stated coordinates, leaving the true location unclear.

Though no GGS were observed during mid-winter 2010 surveys for this project (they are hibernating underground this time of year), the species is likely to be active in the DWSC and Yolo Bypass toe drain, wetlands, and rice fields from spring through fall. The lands adjacent to the DWSC navigation levee on which the proposed project is to be constructed are approximately 200 feet from, and at an approximately 20-foot higher elevation than these adjacent aquatic habitats. The relatively steep slopes of these lands would likely discourage GGS access to the project area and consequently their occurrence in here would be highly unlikely.

White-tailed Kite (*Elanus leucurus*) is a federal species of concern, a "fully protected" species under Section 3511 of the California Fish and Game Code, and protected under the U.S. Migratory Bird Treaty Act. It is a medium-sized raptor of open grasslands, savannahs, and agricultural areas that breeds between February and October and feeds on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. Unlike other raptors, kites often roost and occasionally nest communally; therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds. Both single and paired white-tailed kites were

observed during the various January and February 2010 field surveys conducted for this project; though no roosts or nests of this species was encountered within the project area.

Burrowing Owl (*Athene cunicularia*) is a federal and state species of concern, a "fully protected" species under Section 3511 of the California Fish and Game Code, and protected under the U.s. Migratory Bird Treaty Act. Burrowing owls are yearlong residents in generally flat, open dry grasslands, pastures, deserts, and shrub habitats. They utilize communal ground squirrel, jackrabbit, and other small mammal burrow colonies for nesting and cover, as well as artificial structures such as roadside embankments, levees, and berms. They prefer open, dry, short-cropped grassland habitat and can exhibit high site fidelity, often reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during their breeding season (as early as February 1 through August 31; Thomsen 1971, Zam 1974) or, alternatively, by the presence of molted feathers, pellets, whitewash, or eggshell fragments, near or at a burrow. Although California ground squirrel (*Spermophilus beecheyi*) colonies were observed along the entire project alignment, the majority were concentrated within the northern half of the Proposed Project area. Two burrowing owls were observed in burrows during the January 2010 field surveys.

Cooper's hawk (*Accipiter cooperii*): This CDFG Species of Concern is breeding resident throughout most of the wooded portion of the State from sea level to above 2700 meters. They are mostly found in dense stands of live oak and riparian deciduous forest habitats, frequently near water. They breed in March through August, with peak activity May through July. Cooper's hawk nest in deciduous trees often along riparian areas near streams in crotches 3 to 23 meters, but usually 6 to 15 meters above the ground. They also nest in second-growth conifer stands on horizontal branches, often just below the lowest live limbs. Cooper's hawk has declined throughout California as a breeding bird, but was once considered a common nester throughout the State. Habitat destruction, mainly in lowland riparian areas, is probably the main threat, although direct or indirect human disturbance at nest sites can be equally detrimental. Illegal take of nestlings is also a potential threat, especially in populated areas. Cooper's hawks were observed in cottonwood trees north of proposed Site 1.

Heron rookeries: Two active heron rookeries were observed during the January and February 2010 field surveys: A rookery consisting of approximately 95 great blue heron (*Ardea herodias*) nests in 13 nest trees occurs north of the proposed Site 1. A black-crowned night heron (*Nycticorax nycticorax*) rookery with an undetermined number of nests occurs outside the southern end of the proposed Project Area, at the toe of slope of the levee, several hundred feet southwest of the proposed "borrow area." Active rookeries are protected under Section 3503 (bird nests), are recognized by the California Board of Forestry (BOF) as *Sensitive*, and are also protected by the U.S. Migratory Bird Treaty Act. Active nesting, incubation, and rearing of heron offspring typically occurs between February and June (July); the minimum recommended buffer width for a heron rookery is 600 feet (Castelle, et al. 1992).

Northwestern pond turtle (*Actinemys marmorata marmorata*): The aquatic habitats associated with the DWSC and the Yolo Bypass toe drain likely provide suitable nesting, basking, and migratory opportunities for the northwestern pond turtle, which is a California "Species of Special Concern." The northwestern pond turtle, although primarily found in natural aquatic habitats, also inhabits impoundments, irrigation ditches, and other artificial and natural water bodies (Ernst et al. 1994) and is found at elevations ranging from sea level to 2,041 m (6,696 ft) (Stebbins 2003). The species is usually found in fresh water, but brackish habitats are also utilized (Ernst et al. 1994, D. Holland pers. comm.). The aquatic habitat may be comprised of either mud or rocky substrates and usually contains some vegetation (Ernst et al. 1994). Habitat quality often seems to be positively correlated with the number of available basking sites (Jennings and Hayes 1994). Turtles seem to avoid areas lacking in significant refugia (Holland 1994). Basking sites may be rocks, logs, vegetation, terrestrial islands within the aquatic habitat, and human-made debris (Holland 1994). Northwestern pond turtles may overwinter in aquatic or upland habitats (Holland 1994). Like the giant garter snake (*Thamnophis*

gigas), northwestern pond turtles inhabit the irrigation ditches servicing rice agriculture in the Central Valley (E. Hansen, unpublished notes). While rice fields probably confer little advantage for adult northwestern pond turtles, mature rice probably provides valuable cover and foraging habitat for hatchlings. Several pond turtles were observed during the January and February 2010 field surveys for this project.

Discussion

a, b. Construction-related activities associated with the proposed project would have the potential to impact the Giant Garter Snake (GGS; *Thamnophis gigas*) and/or its habitat. Therefore, a ***Potentially Significant impact*** would result. However, implementation of the following mitigation measures would reduce any potential impacts to a ***less than significant*** level.

Mitigation Measure No. BIO-1

Prior to any surface disturbance activities (grading, excavation or construction) on non-paved areas, the developer shall implement the following measures, or measures which may be adopted through the Yolo County Natural Heritage Program (NHP) Plan, to avoid any impacts to Giant Garter Snake and the habitat upon which it relies, or shall mitigate potential impacts to the satisfaction of the California Department of Fish and Game.

a) Construction activities would be conducted only between May 1 and October 1. This is the active period for giant garter snake and direct mortality is lessened, because snakes can be detected, and can move out of the way of machines and people to avoid injury or death.

b) Twenty-four (24) hours prior to construction activities, the project area would be surveyed by a qualified biologist for giant garter snakes and habitat upon which it relies. The survey of the project area shall be repeated if a lapse in construction of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it is determined by a qualified biologist that the snake will not be harmed. Sightings and/or incidental harm to snakes shall be immediately reported to the U.S. Fish and Wildlife Service, City of West Sacramento Community Development Department, and the County of Yolo Development Services.

c) Based on the site survey, the qualified biologist will flag and designate snake habitat areas to be avoided within or adjacent to the project area as Environmentally Sensitive Areas (ESAs). These areas must be avoided by construction personnel.

d) Prior to ground disturbance (grading, excavation and construction), all on-site construction personnel shall be given Fish and Wildlife Service approved Worker Environmental Awareness Program (WEAP) Training by a qualified biologist regarding how to recognize the presence of Giant Garter Snake and the importance of avoiding impacts to these species and their habitats.

e) In areas where levee toe drains, riverine marsh areas, or other potential giant garter snake habitats are being retained on the site:

i. Install temporary fencing at the edge of the construction area and the adjacent levee toe drain or marsh.

ii. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes and levee toe drains.

iii. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.

f) After completion of construction activities, all temporary fill and construction debris shall be removed whenever feasible and disturbed areas shall be restored to pre-project conditions.

g) If construction is proposed between October 2 and April 30, prior to any ground disturbance the project proponent shall conduct a California Department of Fish and Game-recommended protocol level survey. Prior to any ground disturbance or construction, the results of such survey shall be submitted to the City of West Sacramento Community Development Department and County of Yolo Development Services. Prior to any ground disturbance or construction, appropriate mitigation measures to prevent impacts to GGS potentially hibernating in the project area will be implemented, consistent with the findings of the survey.

c. Although the proposed project lies between the DWSC and toe drain of the Yolo Bypass, the construction footprint of the four solar array sites does not contain federally-protected wetlands, as defined by Section 404 or the Clean Water Act (including, but not limited to, marsh, vernal pool, seasonal wetland, etc.). Therefore there would be **no impact.**

d. Construction of the Proposed Project could result in the direct loss or disturbance of nesting raptors, herons, and other migratory birds. Existing deciduous trees found within the proposed project area could provide nesting habitat for a number of resident and migratory bird species. Several stick nests, great blue heron and black-crowned night rookeries, and observations of burrowing owls, red-shouldered hawks, red-tailed hawks, American kestrels, Cooper's hawks, white-tailed kites, and northern harriers, along with heron rookeries, were documented along the proposed project alignment during the January and February 2010 field surveys. Project-related tree removal and construction activities adjacent to active nest sites could therefore result in potential, adverse impacts to nesting birds, which are protected under the Migratory Bird Treaty Act and Fish and Game Code 3503.5. Disruption of nesting birds, resulting in the abandonment of active nests, or the loss of active nests through structure removal would therefore be considered a ***potentially significant impact***. Implementation of the following mitigation measure would lessen potential threats to nesting birds, which would reduce this impact to a ***less than significant*** level**.**

Mitigation Measure No. BIO-2

Prior to any surface disturbance activities (grading, excavation or construction) on non-paved areas, the developer shall implement the following measures, or measures which may be adopted through the Yolo County Natural Heritage Program (NHP) Plan, to avoid any impacts to nesting raptors or other migratory bird species and the habitat upon which they rely, or shall mitigate potential impacts to the satisfaction of the California Department of Fish and Game."

a) Burrowing Owls: Implementation of the following mitigation measures is required, as construction-related activities have the potential to impact Burrowing Owl (Athene cunicularia) and its habitat.

i. Preconstruction Bird Survey: A qualified biologist or ornithologist will conduct pre-construction breeding season surveys (approximately March 1 and September 15) of the project site and vicinity for nesting burrowing owls. The

survey(s) will be conducted no more than 30 days prior to the initiation of construction, during the season immediately preceding grading operations during the breeding season, or when the young are still in burrows and dependent on the parents. If no active burrows are found during the survey(s), no further mitigation will be required and construction activities may proceed unconstrained.

ii. *Nest Avoidance: If active owl burrows are detected on the project site, the Project Applicant shall either: (1) delay construction in the vicinity of active nest sites during the breeding season until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied; or, (2) if the construction cannot be delayed, establish a suitable (e.g. 75 m) non-disturbance, buffer zone around the nest site, delineated by highly-visible, temporary ESA fencing. Active nest burrows in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied.*

iii. *Burrow Relocation: Following fledging of young, adult owls will be excluded from occupied burrows in the project area by installing one-way doors in burrow entrances, which will be left in place 48 hours to insure owls have left the burrow before excavation and collapse of the existing burrow. An alternate natural or artificial burrow will be provided for in the existing Mitigation Area (between Sites 3 and 4) for each burrow excavated in the project impact zone. The project area will be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.*

b) *Nesting Raptors and Other Migratory Bird Species: Implementation of the following mitigation measures is required, as construction-related activities have the potential to impact nesting Swainson's hawks, white-tailed kites, and other raptors (birds of prey).*

i. *Preconstruction Bird Survey: A qualified biologist or ornithologist will conduct pre-construction breeding season surveys (approximately March 1 and September 15) of the project site and vicinity for nesting raptors. The survey(s) will be conducted no more than 15 days prior to the initiation of construction, during the season immediately preceding grading operations during the breeding season, or when the young are still in nests and dependent on the parents. If no active nests are found during the survey(s), no further mitigation will be required and construction activities may proceed unconstrained.*

ii. *Nest Avoidance: If active bird nests are detected on the project site, the Project Applicant shall either: (1) delay construction in the vicinity of active nest sites during the breeding season until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied; or (2) establish of a suitable (e.g. 150 m) non-disturbance buffer zone around*

the nest site delineated by highly visible temporary ESA fencing. Active nest trees in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied.

c) *Heron Rookeries: Implementation of the following mitigation measures is required, as construction-related activities have the potential to impact existing great blue heron (Ardea herodias) and black-crowned night heron (Nycticorax nycticorax) rookeries in the project vicinity.*

i. *Preconstruction Bird Survey: A qualified biologist or ornithologist will conduct pre-construction breeding season surveys (approximately March 1 and September 15) of the project site and vicinity for active heron rookeries. The survey(s) will be conducted no more than 15 days prior to the initiation of construction, during the season immediately preceding grading operations during the breeding season, or when the young are still in nests and dependent on the parents. If no active nests are found during the survey(s), no further mitigation will be required and construction activities may proceed unconstrained.*

ii. *Nest Avoidance: If active heron rookeries are detected on the project site, the Project Applicant shall either: (1) delay construction in the vicinity of active nest sites during the breeding season until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied; or (2) establish of a suitable (e.g. 200 m) non-disturbance buffer zone around the rookery delineated by highly visible temporary ESA fencing (when/if placement of ESA fencing will not, in itself, disrupt heron nesting.) Active nest trees in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied.*

e. The majority of trees occurs in the southern portion of the proposed project alignment and appear to be even-aged and of fairly recent origin. While many of the larger trees appear to be in good health, smaller trees appear to have undergone stresses associated with grazing livestock, and generally are in fair to poor health.

Chapter 8.24 of the City of West Sacramento Municipal Code addresses tree preservation and defines a "*Heritage tree as any living tree with a trunk circumference of seventy-five inches or more or a native oak with a trunk circumference of fifty inches or more, both measured four feet six inches from ground level. The circumference of multi-trunk trees shall be based upon the sum of the circumference of each trunk*." Although Yolo County has no formal "Tree Preservation Ordinance," its current general plan calls for: *establishing design and site development standards and applying them to prevent unnecessary disruption of vegetation (CON 7); establishing a tree-planting program and requiring extensive use of trees on private and public lands (CON 28); and adopting a Tree Preservation Ordinance and a Grading Ordinance with standards to support Scenic Highways, Open Space, and Conservation policies (SH 4)*. The County also adopted an *Oak Woodland Conservation and Enhancement Plan* in 2007.

None of the trees within the four proposed project sites could be classified as "heritage trees", as there were no native oaks, nor was the single diameter of any tree greater than 36 inches diameter at breast height (dbh). While a formal tree survey was not conducted for this project, field data was collected on general tree health and number of trees (with greater than 6" dbh), as well as random sampling to yield average height, dbh, and critical root zone (CRZ). These results are summarized in Table 4, below.

TABLE 4

	Species	Number	DBH	Average Height	Average CRZ	Overall Health
SITE 1 - Even-aged stand of multi-trunked trees; few scattered willow < 4" dbh	Fremont's Cottonwood	43	6-12"	22'	13'	Good
SITE 2 - Multi-trunked trees	Fremont's Cottonwood	2	6-12"	16'	12'	Fair–Poor; plants generally distressed by grazing
SITE 3 - No trees in northern end, except tamarisk and small willow thicket; trees in southern half even-aged, multi-trunked	Fremont's Cottonwood	40	6-12"	22'	14'	Good
	Goodding's Willow	16	6-12"	25'	17'	Good-Fair
SITE 4 - Cottonwoods infrequent, but larger and single-trunked.	Fremont's Cottonwood	6	6-12"	25'	15'	Good
Multi-trunked willows dominant; generally even-aged.	Goodding's Willow	127	6-12"	22'	17'	Fair; numerous small trees generally distressed by grazing animals
BORROW AREA - Cottonwoods dominant;	Fremont's Cottonwood	14	6-12"	22'	15'	Good-Fair
willows generally multi-trunked.	Goodding's Willow	2	6-12"	20'	15'	Fair

Based on the above information, there would be ***no impact*** with respect to local policies and ordinances regarding biological resources.

f. The Yolo County Natural Heritage Program (NHP) Plan is a comprehensive, county-wide plan designed to provide for the long-term conservation and management of sensitive and at-risk species and the habitats upon which they depend, while accommodating other important uses

of the land. Specifically, the NHP Plan is intended to protect regional biodiversity by focusing on the protection of important natural communities, including agricultural landscapes that support key species and ecological processes. The NHP Plan serves as a Habitat Conservation Plan (HCP), pursuant to the federal Endangered Species Act (ESA), and a Natural Community Conservation Plan (NCCP) under the California Natural Community Conservation Planning Act (NCCPA). The project site is located within the NHP area; however, the plan (along with the Yolo County General Plan, which anticipates the approval and implementation of the NHP Plan, and its incorporation into the Conservation and Open Space Element of the General Plan) is still under draft revision and review. However, the Proposed Project would not conflict with the adoption of the future NHP, local policies or ordinances protecting biological resources, or other approved local, regional, or state habitat conservation plan. There would be ***no impact.***

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
5. CULTURAL RESOURCES. *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries.	☐	☒	☐	☐

Discussion

a. The proposed project consists of the addition of a solar power plant consisting of 1,920 trackers on land adjacent to and east of the existing Deep Water Ship Channel (DWSC) navigation levee and does not include any historical resources. ***No impacts*** on historical resources would result from construction or operation of the proposed project.

b - d. The project site has been previously disturbed and developed as part of the existing levee construction along the west side of the DWSC, so it is unlikely that construction of the proposed project would result in the discovery of previously undiscovered cultural or paleontological resources. The project sites are principally comprised of dredge material from past efforts to deepen the DWSC. Each site will be graded and compacted to match the existing levee elevation. Fill material will come for the borrow site identified on the project plans. Given that the fill material consists past dredge spoils, discovery of cultural resources is unlikely. Nonetheless, there is a remote possibility that subsurface archaeological or paleontological resources could be disturbed by project construction and excavation. Therefore, a ***potentially significant impact*** could result. However, Mitigation Measure CR-1 would ensure that any previously undiscovered archaeological or paleontological resources would be treated by a qualified professional, who would reduce impacts via data recovery or capping of the site. The impact, therefore, is considered ***less than significant*** with mitigation incorporated.

Mitigation Measure No. CR-1

(a) In the event that any subsurface archaeological or paleontological resources are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted immediately, and the City of West Sacramento Community Development Department shall be notified immediately.

Depending on the nature of the find (i.e., archaeological or paleontological resource), the project proponent shall retain a professional archaeologist or paleontologist. The Community Development Department will consult with the archaeologist or paleontologist to assess the significance of the find. Impacts on any significant resources shall be mitigated through methods determined adequate by the Community Development Department, including but not limited to data recovery or capping of the site.

(b) *If human remains are discovered during any demolition/construction activities, all ground-disturbing activity within fifty feet (50') of the remains shall be halted immediately, and the Yolo County coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project proponent shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The Community Development Department will be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines §15064.5(e) and Public Resources Code §5097.98. The project proponent shall implement approved mitigation in accordance with the aforementioned requirements, to be verified by the Community Development Department, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.*

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
6. GEOLOGY AND SOILS. *Would the project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist - Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☐	☒
iii. Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv. Landslides?	☐	☒	☐	☐
b) Result in substantial soil erosion, or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐
d) Be located on expansive soils, as defined in Table 18-1-13 of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Background

The project site consists of an approximately 3-mile long, 500-foot wide strip of property along the west side of the Deep Water Ship Channel (DWSC) at the Port of West Sacramento, California. The project site is divided into four sites (Site 1 through Site 4), each approximately 500 feet wide and 3,100 feet long. The project site also includes a separate proposed borrow area located south of Site 4, from

which the soils are to be transported to Sites 1, 2, 3, and 4 for use as engineered fill, as needed. The general site locations are shown in Figure 1.

West Sacramento is located in the Sacramento Valley, which is underlain by a synclinal (i.e., sloping downward from opposite directions to meet in a common point or line) depression in which various sedimentary deposits have accumulated for over 100 million years, beginning with marine sediments from a receding ocean and followed by river deposits washing down from the Sierra Nevada, Klamath, Cascade, and Coast Ranges. Fine-grained sediments, mostly silt and clay, deposited by still water resulting from seasonal flooding cover most of the West Sacramento area. These sediments are generally of low permeability. The combined depth to bedrock of the river borne deposits and the marine deposits is over 12,000 feet. West Sacramento is reclaimed land, virtually flat and protected from floods by levees along the Sacramento River and Yolo Bypass. Most of West Sacramento lies between ten and thirty feet above sea level.

According to the City of West Sacramento General Plan (GP) Background Report, West Sacramento is located in one of the least active seismic regions in California. According to existing geologic information, there are no known or inferred faults within West Sacramento. The nearest known faults are generally located west to southwest of West Sacramento. The Midland fault zone is located approximately 18 miles southwest, the Greenland fault is situated about 40 miles southwest, and the Rodgers Creek fault is approximately 65 miles west of West Sacramento. Because these faults are reported to have had horizontal displacements in the past, they are considered potentially active. The active faults nearest to West Sacramento are the Calaveras (50 miles east), the Hayward (60 miles west), and the San Andreas (80 miles west).

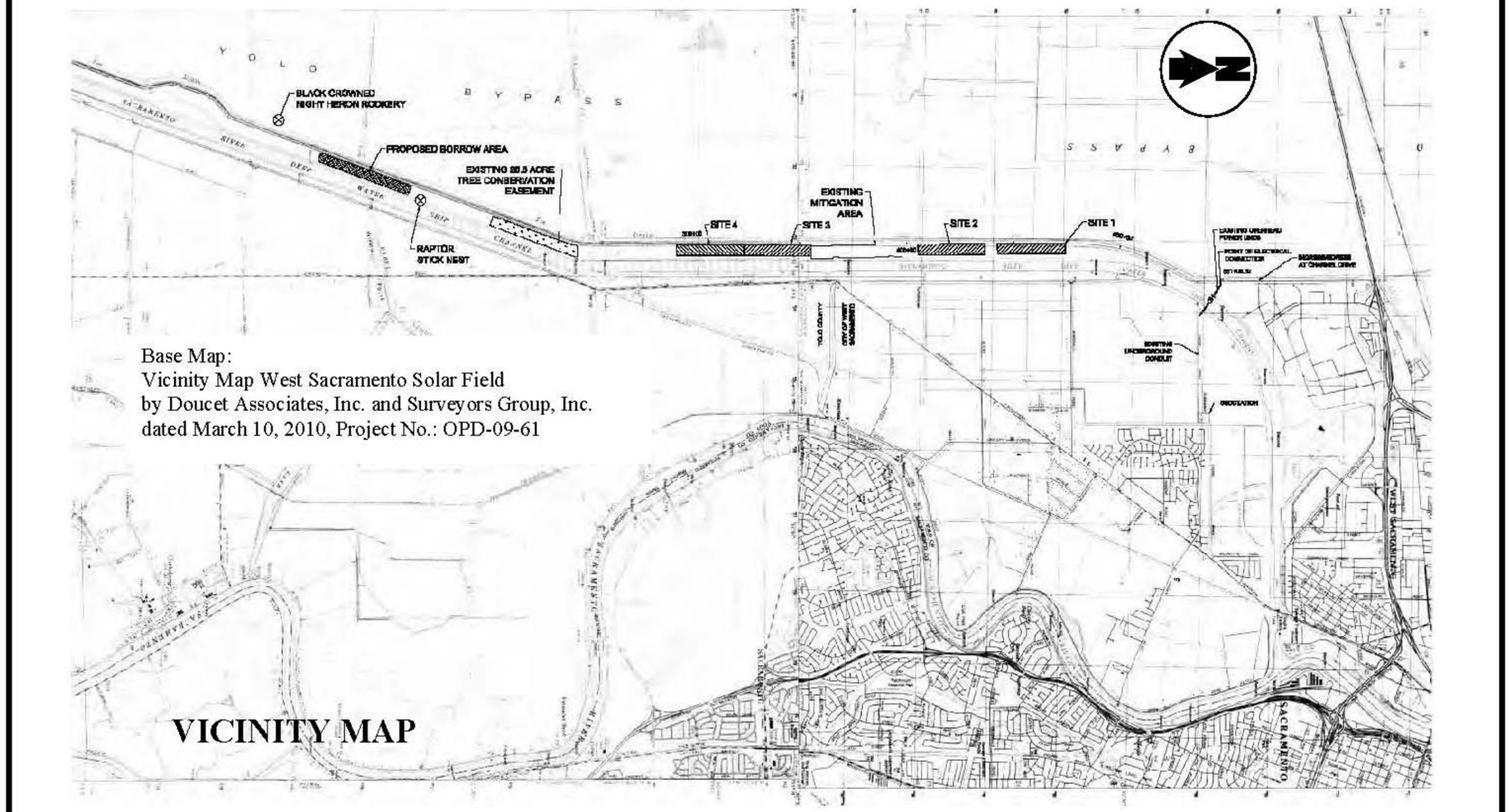
The Geology and Soils section of this Initial Study is primarily based on the *Geotechnical Investigation and Limited Environmental Testing Report* (geotechnical report) that was prepared for the proposed project by MatriScope Engineering Laboratories, Inc. in April 2010. The geotechnical report includes recommendations related to the geotechnical aspects of project design and construction. The recommendations contained in the geotechnical report are based on MatriScope's field observations and subsurface explorations on the proposed project site, limited laboratory tests, and MatriScope's knowledge of the proposed construction activities.

Construction

The proposed project consists of 1,928 isolated concrete foundations (13 feet in diameter and two feet in depth) to support the solar panels. The concrete foundations will be on top of the proposed finish grade without excavation. The concrete foundations will be typically spaced center-to-center 52 feet and 65 feet apart in north-south direction and east-west direction, respectively. Sites 1, 2, and 3 would include the installation of one utility pole on each site. An underground three-inch diameter conduit with conductors is proposed across each site. Buildings, pavement, or landscaping are not planned as part of the proposed project.

The existing site grade varies from 11 to 37 feet above mean sea level. The preliminary grading design calls for a finish design pad elevation at 27 feet above mean sea level. Cut and fill are expected in order to achieve level pads. Main fill operation up to 16 feet in depth will be at Site 1. Major cut operation of up to 10 feet in depth will occur at Site 3. Sources of backfill materials include a borrow area and a plateau (approximately 1,900 feet in length, 500 feet in width, and 10 feet above the proposed finish subgrade) located at Site 3.

Figure 1
Project Vicinity Map



Site Reconnaissance

MatriScope performed a site reconnaissance on March 31, 2010 to observe surface conditions on the site that could affect the geotechnical aspects of the project and to note areas of obvious geotechnical concerns. Staking of the proposed test pit locations was also performed.

Subsurface Exploration

In April 2010, a subsurface exploration at the site was performed to investigate and sample soils beneath the site. Nineteen (19) exploratory test pits were excavated to depths ranging from 10 to 15 feet below the existing ground surface. In addition, the slope surface of the existing plateau next to Test Pit S3T3 was excavated to expose the soil conditions. The test pits were excavated with a backhoe. All test pits were located at least 80 feet east away from the project limit (along the edge of the access road) to avoid impacting the existing levee prism. Approximate locations of exploratory test pits are shown in Figures 2 through 6.

Site Conditions

Surface Conditions: Sites 1 through 4 and the borrow area are currently vacant with heavy vegetation and scattered trees. Surface cracking, a sign of expansive clay, was observed throughout the sites. The lowest site grade is at Site 1. The highest site grade is at the plateau located at Site 3 with a size of approximately 2,900 feet in length and 500 feet in width.

Subsurface Conditions: In general, soils encountered in the test pits consisted of dredge materials that have been discharged from the Sacramento Deep Water Ship Channel since the early 1960s. The soils encountered consist of interspersed clay with high-plasticity, clay with low to medium plasticity, sandy/clayey silt, silty sand and/or sand to the maximum explored depth of approximately 15 feet below existing site grade. The dredge materials appear to have become moderately consolidated since discharged. Consistency and some cementation gained from the consolidation in the past were observed from site reconnaissance and the soil samples visually examined in the laboratory. It should be noted that boulders up to approximately three feet in dimension were observed in the area immediately south of the existing plateau at Site 3. Boulders were encountered in the upper four feet of the Test Pit S3T4 excavation.

Groundwater: At the time of the field investigation, groundwater was not encountered in any of the 19 test pits explored to the maximum depth of 15 feet below existing ground surface. It should be noted that groundwater and soil moisture conditions within the area vary depending on rainfall, irrigation practices, and/or runoff conditions not apparent at the time of the field investigation. Commonly, groundwater elevation changes seasonally.

Figure 2
Site 1 Test Pit Location Map

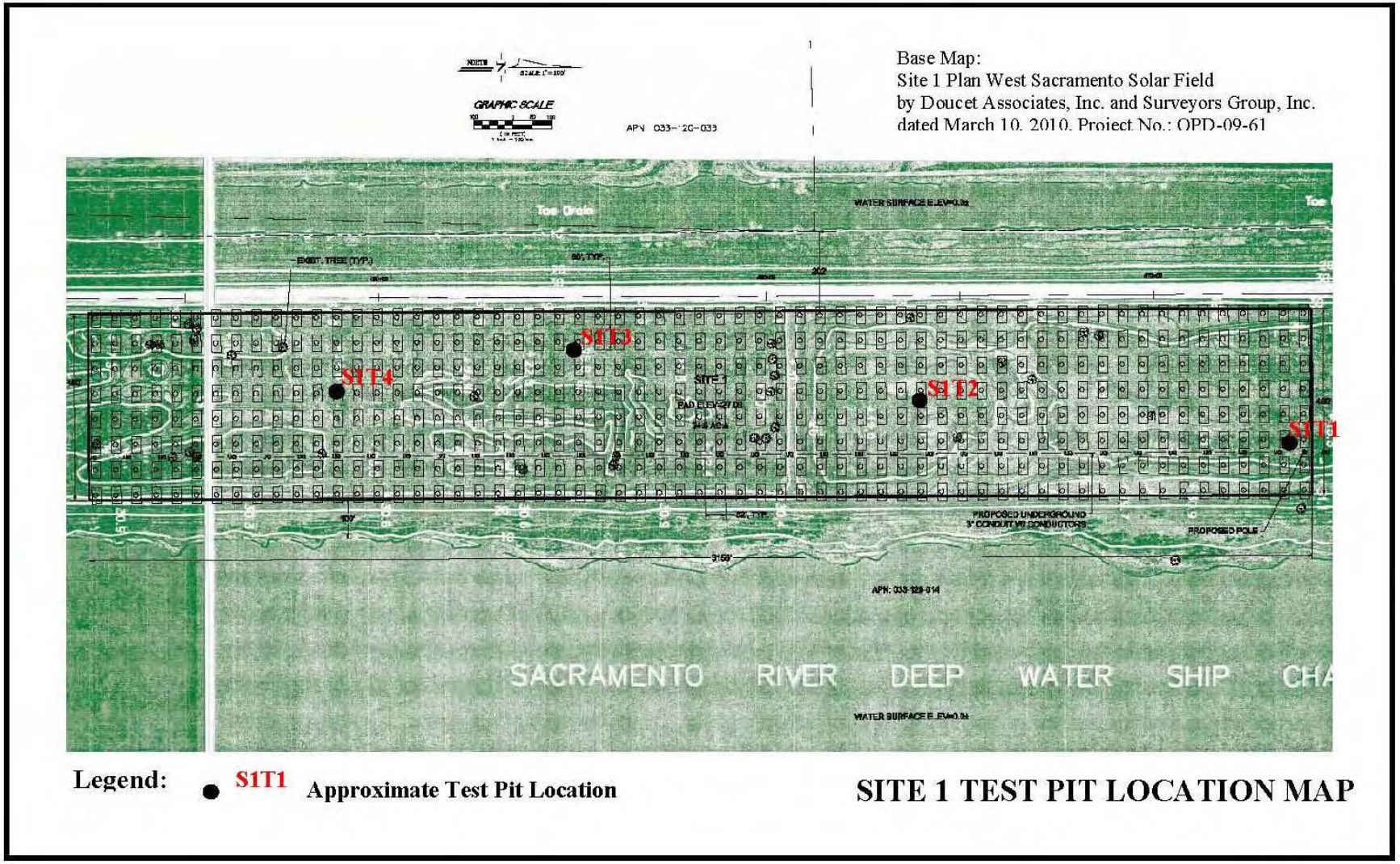


Figure 3
Site 2 Test Pit Location Map

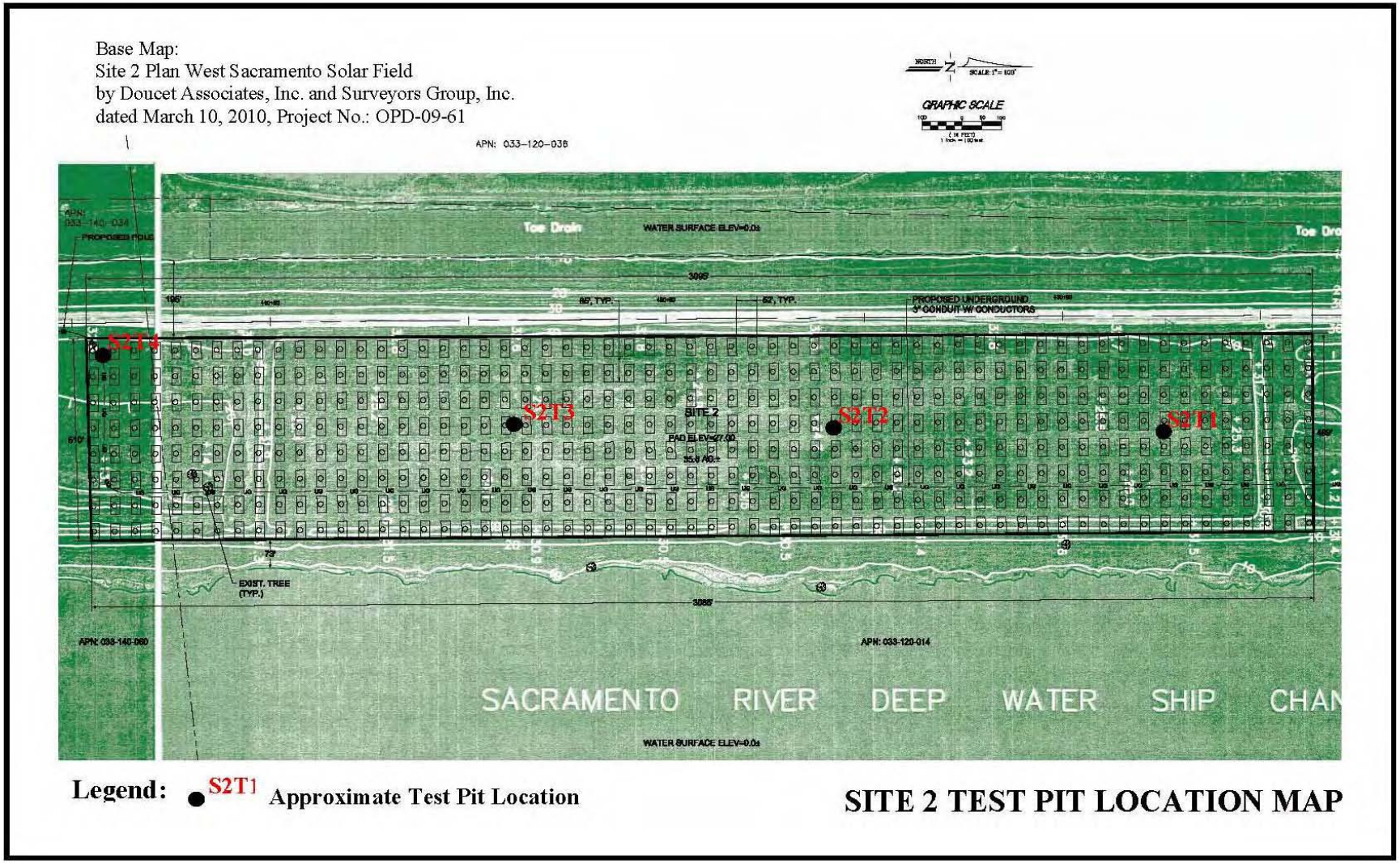


Figure 4
Site 3 Test Pit Location Map

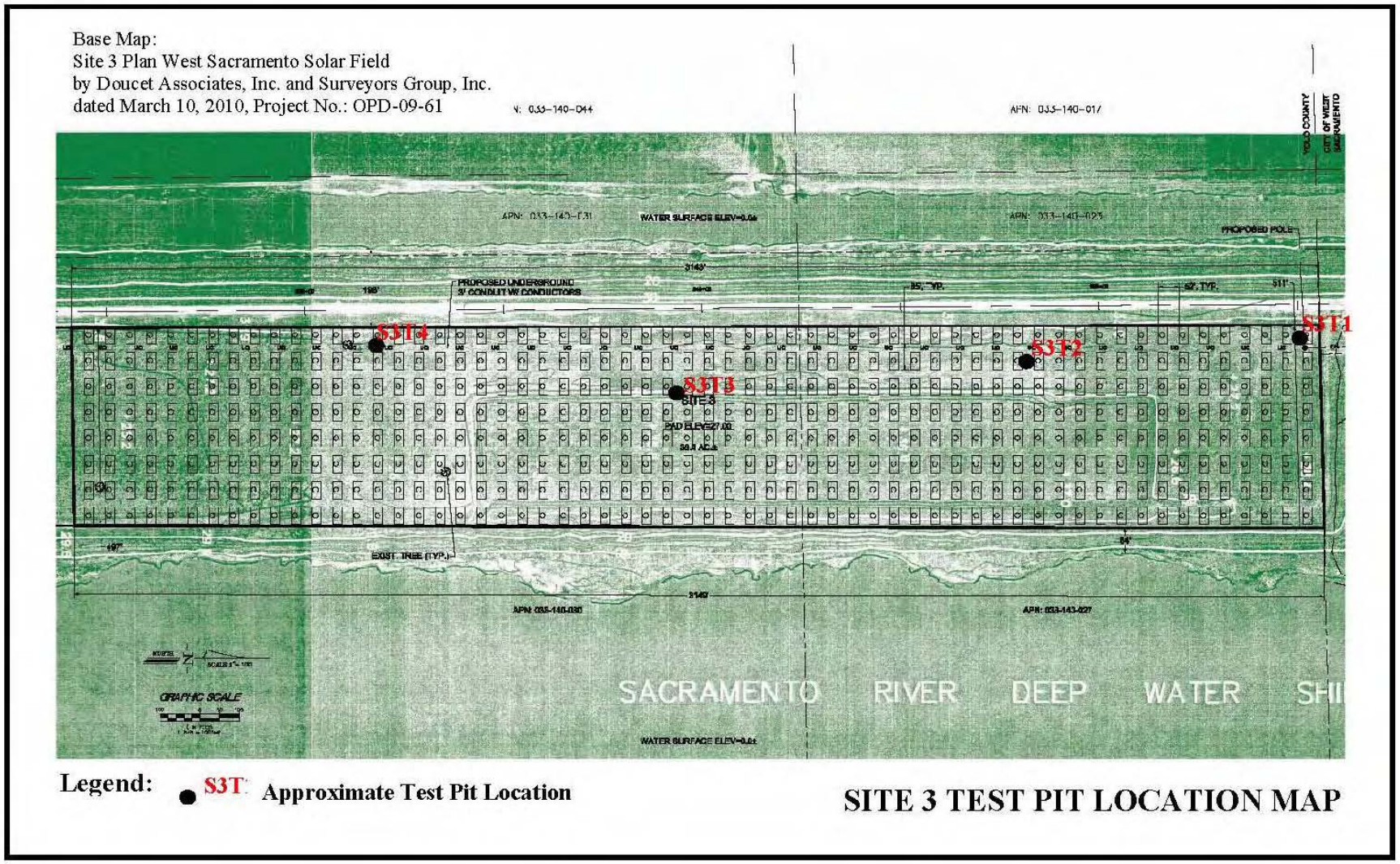


Figure 5
Site 4 Test Pit Location Map

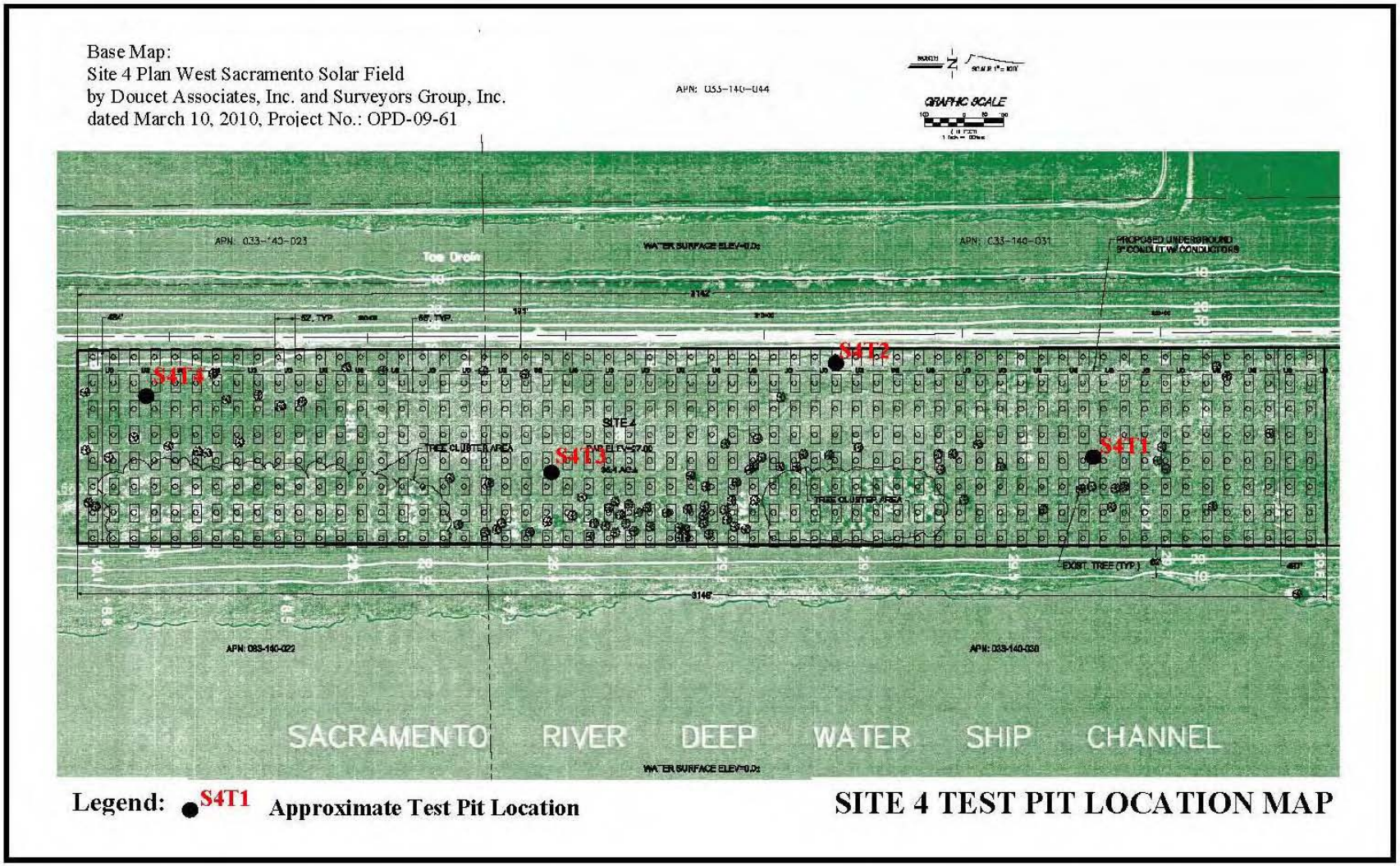
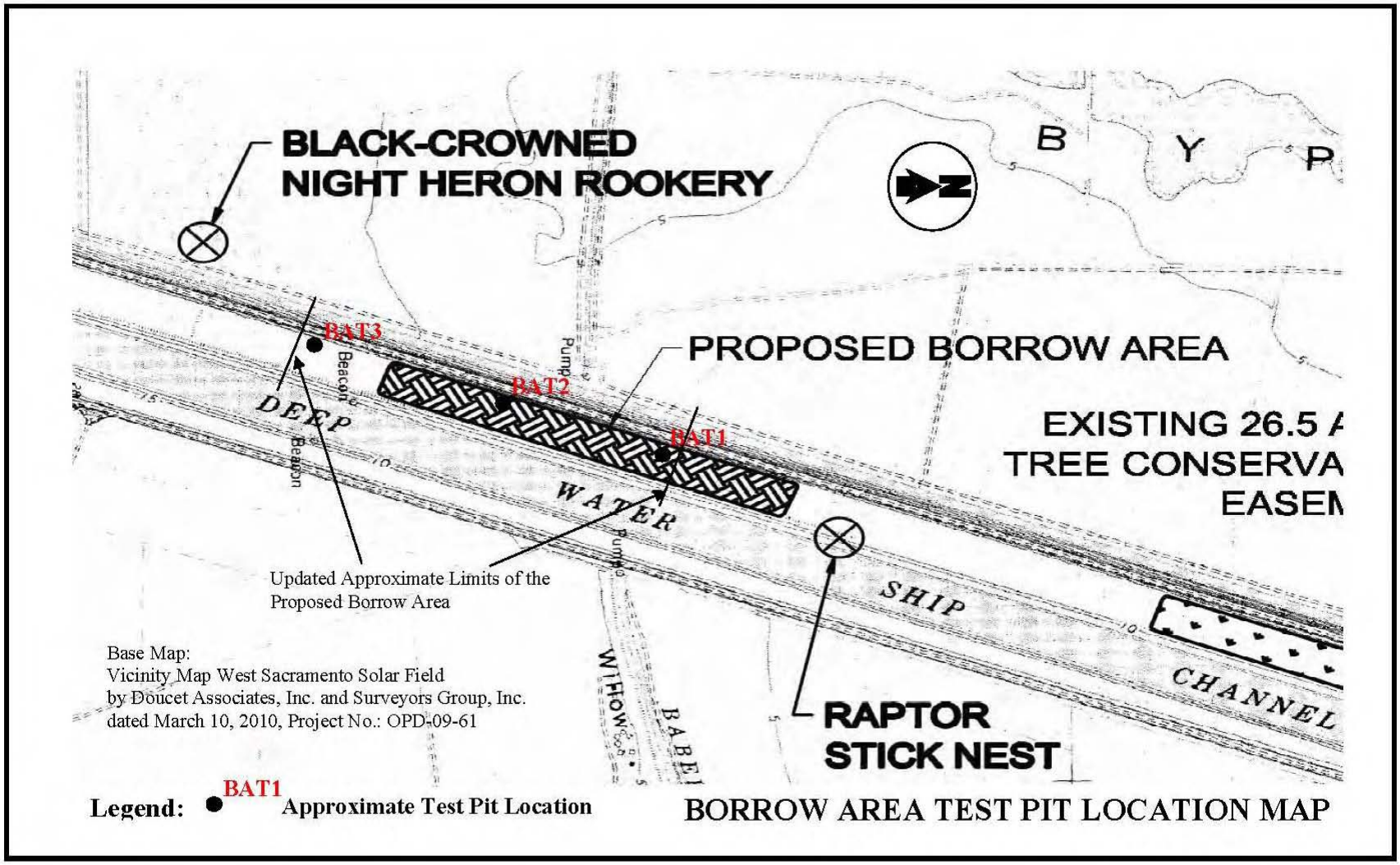


Figure 6
Borrow Area Test Pit Location Map



Discussion

a_i-a_{ii}. According to the City of West Sacramento GP Background Report, the City has experienced a relatively low level of historic seismic activity. While the area has not been the source of quakes in recent geologic time, activity in neighboring regions suggests that the West Sacramento area could be affected by future activity in those regions.

Seismic History: The California historic record of earthquakes is less than 250 years old. It is possible, therefore, that earthquakes may occur along unknown faults or along faults without recognized historic activity. One of the first quakes to be reported in West Sacramento occurred in 1857. The Sacramento area experienced effects equivalent to a V (five) on the Mercalli Intensity Scale, which is used to measure the intensity of earthquakes.

Since 1857, numerous earthquakes from II (two) to VII (seven) on the Mercalli Scale have been reported in the greater Sacramento area. The most severe quake to affect the Sacramento area occurred in April of 1892. Residents of Sacramento reported experiencing earthquake intensities that ranged from VII to VIII. The 1868 earthquake along the Hayward Fault produced shaking of intensity V to VI. A seiche (oscillation of a water surface) occurred during this event; the Sacramento River receded and then rose rapidly. In October, 1989, some residents at rest reported feeling the Loma Prieta earthquake. Other residents noted the water sloshing out of swimming pools. This earthquake was centered about 110 miles southwest of the City. The 1906 San Francisco earthquake along the San Andreas fault, with an intensity of approximately VI to VII on the Mercalli Scale (at Sacramento) caused groundshaking, but little damage in the Sacramento area. In more recent times, earthquakes in 1954 and 1966 were strongly felt in the Sacramento area and caused some minor damage.

Groundshaking: The most serious direct earthquake hazard is the damage or collapse of buildings and other structures caused by groundshaking. Groundshaking is the vibration which radiates from the epicenter of an earthquake. Damage to structures from groundshaking is caused by the transmission of vibrations from the ground into the structure. The effects of groundshaking can be damaging well beyond the fault trace that generates the shaking.

Older buildings constructed before building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in the current building codes, are the most likely to suffer damage in an earthquake. Many of West Sacramento's buildings are one or two stories high and are of wood frame construction, which is considered the most structurally resistant to earthquake damage. Older masonry buildings without earthquake-resistant reinforcement are the most susceptible to the sort of structural failure which causes the greatest loss of lives. The susceptibility of a structure to damage from earthquake groundshaking is also related to the foundation material underlying the structure. A foundation of rock or very firm material intensifies short period motions, which affect the low-ridged buildings more than tall, flexible ones. A deep layer of water-logged soft alluvium may cushion low-ridged buildings, but accentuate the motion in tall buildings. The amplified motion resulting from softer alluvium soils can also severely damage older masonry buildings. Other potentially dangerous conditions include building projections which are not firmly anchored, such as parapets and cornices. These projections could collapse during periods of strong and/or sustained groundshaking.

The project would include the construction of four grid-paralleled, photovoltaic, solar electric generating systems on 160 acres on lands adjacent to and east of the Deep Water Ship Channel (DWSC) navigation levee. It should be noted that the State of California provides minimum standards for building design through the 2007 California Building Code (California

Code of Regulations (CCR), Title 24), which is based on the 2006 International Building Code (IBC). The CBC includes specific safety and design standards for new structures to resist the forces of strong winds and seismic activity. The State and the City of West Sacramento require that all new developments adhere to CBC standards. Adherence to these structural design guidelines would reduce any construction or operational seismic impacts to ***less-than-significant*** levels.

a_{iii}, a_{iv}, c. In addition to structural damage caused by groundshaking, other ground effects can be caused groundshaking. These are known as ground failure effects and include liquefaction, settlement, lateral spreading, and earthquake induced landslides. The following discussions are based primarily on the "Seismic and Geologic Hazards" section of the GP Background Report.

Liquefaction is a specialized form of ground failure caused by earthquake ground motion. Liquefaction is a "quicksand" condition occurring in water-saturated, unconsolidated, relatively clay-free sands and silts caused by ground motion forcing apart soil particles. In the process, normally firm ground materials take on the characteristics of liquid. The evaluation of potential for liquefaction is complex and must consider soil type, soil density, groundwater table, and the duration and intensity of shaking. Liquefaction is most likely to occur in deposits of weak saturated alluvium or similar deposits of artificial fill, and locations with a high groundwater table. Liquefaction potential within West Sacramento exists in low-lying areas composed of unconsolidated, saturated, clay-free sands and silts. According to the geotechnical report, clays (designated as CH or CL based on ASTM soil classification test method) were encountered in all of the test pits and observed throughout Sites 1-4 and the borrow site. In addition, the geotechnical report notes that groundwater was not encountered in any of the 19 test pits, which were explored to maximum depths of 15 feet below the existing ground surface. Based on these observations, impacts related to liquefaction are not expected to be significant.

Settlement is the compaction of soils and alluvium caused by groundshaking. It occurs irregularly and may be partly controlled by bedrock surfaces, and old lake, slough, swamp, and stream beds. The amount of compaction may range from a few inches to several feet. Irregular compaction is most widespread and extreme in major earthquakes. Compaction could occur as much as 75 to 80 miles from the epicenter and could amount to several feet, even at that distance. Compaction is most likely to occur in areas, such as West Sacramento, which are underlain by soft water-saturated low density alluvial material.

Lateral Spreading is the horizontal movement or spreading of soil toward an open face such as a stream bank, the open side of fill embankments, or the sides of levees. Artificial fill areas which are improperly engineered or which have steep, unstable banks are most likely to be affected. The potential for lateral spreading is highest in areas where there is a high groundwater table, relatively soft and recent alluvium deposits, and where creek banks are relatively high. Fracture patterns from lateral spreading may be controlled by the configuration of shallow bedrock structures, by highway surfacing, by the margins of fill, and engineering structures. Because the West Sacramento is situated on alluvial deposits, its levees and the banks of the DWSC could potentially suffer damage from lateral spreading.

Subsidence of the land surface can result from extraction of groundwater, gas, oil, and geothermal energy. Hydrocompaction, peat oxidation, and fault rupture are also potential causes of subsidence. Groundwater withdrawal subsidence is the most extensive type in California. This type of subsidence has been observed only in valley areas underlain by alluvium. Subsidence can cause a change in gradients affecting the carrying capacities of

canals, drains, and sewers. Compaction of sediments at depth has caused extensive damage to water wells in areas where subsidence has been substantial. West Sacramento is within the Sacramento Valley Groundwater Basin. This basin has been identified by the California Department of Water Resources as experiencing overdraft, although West Sacramento is not in a portion of the basin experiencing overdraft. Some subsidence has been reported between Knights Landing and Zamora in Yolo County.

Landslides: Earthquakes can also cause landsliding and slumping. West Sacramento is mostly level, so landsliding and slumping should not be problems, except perhaps along the DWSC bank, which, depending upon the gradient of the slope and the measures taken to stabilize the free-face, could experience landsliding and slumping. It should be noted that the geotechnical report prepared for the proposed project indicates that the proposed project can be constructed on the proposed project site provided that the recommendations contained in the geotechnical report are implemented into project design and construction.

Because the potential exists for development on the project site to experience settlement, subsidence, lateral spreading, and/or landsliding, a ***potentially significant*** impact would result. However, implementation of the following mitigation measure would reduce the above impact to a **less-*than-significant*** level.

Mitigation Measure No. GEO-1
Prior to approval of Improvement Plans, the project applicant shall demonstrate on the Improvement Plans that all of the recommendations within the Geotechnical Investigation and Limited Environmental Testing Report prepared by MatriScope Engineering Laboratories, Inc. shall be incorporated into foundation and structure design, as well as the design of any roadway or infrastructure improvements, for the review and approval of the City Engineer.

b. According to the U.S. Soil Conservation Service, the erosion hazard exhibited by the surface soils in West Sacramento is considered low. The essentially level topography of the West Sacramento area means that erosion will not present a significant problem. Some soil erosion may occur where cohesionless soils in hydraulic fill and natural soils are placed on a slope and subjected to wave action. Along the DWSC, wave action has caused erosion to unprotected banks; however, banks protected by riprap appear stable and free of erosion. The levees along the Yolo Bypass are also subject to erosion caused by wave action during flood periods. The erosion damage is not considered serious because it can be easily repaired with additional dirt or riprap.

The susceptibility of certain land areas to erosion and ground failure is in part determined by the type of soils present. Two of West Sacramento's major soil associations, the Sacramento Association and the Sycamore-Tyndall Association, are characterized as having little or no erosion hazard, poor permeability, high to moderate shrink-swell capacity, and high water retention capability. The Sacramento Association consists of nearly level silty clay loams and heavy clays formed in basins. The Sycamore-Tyndall Association is also nearly level with fine sandy loams and clay loams formed on alluvial fans. Generally the West Sacramento area has a very high water table, which varies due to seasonal water amounts.

All soils have certain engineering properties and characteristics such as erosion potential, shrink-swell behavior, and permeability, which determine their suitability and constraints for building sites, loads, grading, and drainage systems.

During construction within the proposed project area, topsoil would be moved and graded. The removal and grading of topsoil would lead to potential erosion of the project site soils because disturbed soil would not have as much connectivity to the ground as undisturbed soil. The

disturbed soils are more likely to undergo erosion from a variety of sources, such as wind and water. Construction activities involve water, which may further erode the topsoil as the water moves across the ground, or precipitation may lead to soil erosion on the project site. Therefore, the impact would be considered ***potentially significant.***

According to the *Geotechnical Investigation and Limited Environmental Testing Report*, the proposed project can be constructed on the proposed project site provided the recommendations contained in the geotechnical report are implemented into project design and construction (See Mitigation Measures GEO-2 and GEO-3, below). In addition, the geotechnical report indicates that the project would not significantly impact the existing levee. However, implementation of the following mitigation measure would reduce the above impact to a ***less-than-significant*** level.

Mitigation Measure No. GEO-2
Prior to issuance of grading permit, the applicant shall obtain a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to ground disturbance. The SWPPP would incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest extent feasible, adverse impacts to water quality from erosion and sedimentation. A copy of the SWPPP including BMP implementation provisions shall be submitted to the Chief Building Official.

d. According to the geotechnical report prepared for the project, clays (designated as CH or CL based on ASTM soil classification test method) were encountered in all of the test pits and observed throughout all of the sites. Clay (CH) typically has a medium to high expansion potential, which is not uncommon within the dredge materials encountered near the Port of West Sacramento. The clay (CL) encountered is considered to have a moderate expansion potential. Clay materials may expand or contract when subject to moisture changes through moist-dry cycles. Clay materials may also crack when they dry. Proper soil compaction, site drainage, site maintenance, pavements with concrete and/or asphalt concrete, and chemical (lime and/or cement) treatments could reduce the expansion potential; however, they would not eliminate the expansion potential entirely. The soil expansion potential may result in uneven grade under isolated foundations and grade variations throughout the sites and should be considered in the foundation design.

In addition, the geotechnical report notes that the high plasticity of some of the alluvial soils on-site, together with the lack of bedrock and seasonally high water tables, requires specific foundation engineering. Because the soils on the project site are considered moderately expansive, a ***potentially significant*** impact would result. However, implementation of the following mitigation measure would reduce the above impact to a ***less-than-significant*** level.

Mitigation Measure No. GEO-3
Implement Mitigation Measure GEO-2.

e. The proposed project consists of the construction of four grid-paralleled, photovoltaic, solar electric generating systems adjacent to the DWSC navigation levee. The use of septic tanks or alternative wastewater disposal systems is not proposed and would not be required for the proposed project. Therefore, in regard to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems, ***no impact*** would result.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
7. GREENHOUSE GAS EMISSIONS. *Would the project:*				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Background

Greenhouse Gases (GHG) are gases that trap heat in the atmosphere. These gases are emitted by both natural processes and human activities. The accumulation of GHG in the atmosphere regulates the earth's temperature. Without natural GHG, the Earth's surface would be approximately 61 degrees Fahrenheit cooler.[6] However, the combustion of fossil fuels (coal, petroleum, natural gas, etc.) for human activities, such as electricity production and vehicle use, has elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The increase in atmospheric concentrations of GHG has resulted in more heat being held within the atmosphere, which is the accepted explanation for Global Climate Change (GCC).

Global Warming Potentials (GWP) are one type of simplified index (based upon radiative properties) that can be used to estimate the potential future impacts of emissions of various gases. According to the U.S. EPA, the global warming potential of a gas, or aerosol, to trap heat in the atmosphere is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." GWP is based on a number of factors, including the heat-absorbing ability of each gas relative to that of carbon dioxide, as well as the decay rate of each gas relative to that of carbon dioxide. Common GHG components include water vapor, carbon dioxide, methane, nitrous dioxide, chlorofluorocarbons, hydro-fluorocarbons, perfluorocarbons, sulfur hexafluoride, and ozone.

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere water vapor maintains a climate necessary for life. Changes in the concentration of water vapor are primarily considered to be a result of climate feedback related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher, leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor; this is referred to as a "positive feedback loop."

Water vapor does not have any known health effects; however, when some pollutants come in contact with water vapor, the pollutants can dissolve and the water vapor can then act as a pollutant-carrying

[6] Association of Environmental Professionals, *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, June 29, 2007.

agent. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas), from sea ice and snow, and transpiration from plant leaves.

Carbon dioxide (CO_2) is an odorless and colorless GHG that is emitted from natural and manmade sources. Natural sources of CO_2 include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood. Outdoor levels of CO_2 are not high enough to result in negative health effects. CO_2 is naturally removed from the air by photosynthesis, dissolution into water, transfer to soils and ice caps, and chemical weathering of carbonate rocks.

Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. For example, prior to the industrial revolution, CO_2 concentrations were fairly stable at 280 ppm. Today, CO_2 concentrations are around 370 ppm, which is an increase of more than 30 percent. Left unchecked, the concentration of CO_2 in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources.

Methane (CH_4) is an extremely effective absorber of radiation, though the atmospheric concentration of CH_4 is less than that of CO_2 and its lifetime in the atmosphere is brief (10 to 12 years), compared to other GHGs. Health effects are not known to occur from exposure to CH_4. CH_4 has both natural and anthropogenic sources. CH_4 is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4. Other anthropogenic sources include fossil fuel combustion and biomass burning.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless GHG that can cause dizziness, euphoria and slight hallucinations. In small doses, N_2O is considered harmless; however, in some cases, heavy and extended use can cause brain damage. Concentrations of N_2O began to rise at the beginning of the industrial revolution. In 1998, the global concentration of N_2O was 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to the atmospheric load of N_2O. N_2O can be transported into the stratosphere, deposited on the earth's surface, and converted to other compounds by chemical reaction.

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs are no longer being used; therefore, the likelihood of health effects being experienced is very low. Nonetheless, in confined indoor locations, working with some CFCs is thought to result in death by cardiac arrhythmia or asphyxiation. CFCs, which were first synthesized in 1928, do not have any natural sources. CFCs were used as refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that CFCs are able to destroy stratospheric ozone, a global effort to halt their production was undertaken. This effort was very successful, such that levels of the major CFCs are now steady or declining. However, the long atmospheric lifetimes of CFCs mean that some CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all of the GHGs, HFCs are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are the following: HFC-23, HFC-134a, and HFC-152-a. Prior to 1990, the only significant emissions were of HFC-23. However HFC-134a emissions are increasing due to its use as a refrigerant. The U.S. EPA estimates that concentrations of HFC-23 and HFC-134a are now approximately 10 parts per trillion (ppt) each, while concentrations of HFC-152a are approximately one ppt. Health effects are not known to result from exposure to HFCs.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur approximately 37 miles above the surface of the earth, are able to destroy PFCs. Because of this, PFCs have very long lifetimes – between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The two main sources of PFCs are primary aluminum production and semiconductor manufacture. The U.S. EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt. Health effects are not known to result from exposure to PFCs.

Sulfur hexafluouride (SF_6) is an inorganic, colorless, odorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated. The U.S. EPA indicates that concentrations of SF_6 in the 1990s were approximately four ppt. In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Carbon dioxide is widely used as the reference gas for comparison of equivalent global warming potential. The CO_2 equivalent is a good way to assess emissions because the use of an equivalent gives weight to the global warming potential of the gas. Methane gas, for example, is estimated by the Association of Environmental Professionals and the U.S. EPA to have a comparative global warming potential 21 times greater than that of CO_2, as shown in Table 5. At the extreme end of the scale, sulfur hexafluoride is estimated to have a comparative global warming potential 23,900 times that of CO_2. The "specified time horizon" is related to the atmospheric lifetimes of such GHGs, which are estimated by the U.S. EPA to vary from 50-200 years for CO_2, to 50,000 years for tetrafluoromethane. Longer atmospheric lifetimes allow GHG to buildup in the atmosphere; therefore, longer lifetimes correlate with the global warming potential of a gas.

Table 5
Global Warming Potentials and Atmospheric Lifetimes Of Select Greenhouse Gases

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetraflouromethane (CF_4)	50,000	6,500
PFC: Hexaflouroethane (C_2F_6)	10,000	9,200
Sulfur Hexaflouride (SF_6)	3,200	23,900

Source: U.S. Environmental Protection Agency, Office of Atmospheric Programs. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 -2000. April 2002.

One teragram (equal to one million metric tons) of CO_2 equivalent (Tg CO_2 Eq.) is defined by the U.S. EPA as the emissions of the reference GHG multiplied by the equivalent global warming potential. In 2004, total worldwide GHG emissions have been estimated to be 20,135 Tg in CO_2 equivalents. In

2004, the U.S. contributed the greatest percentage of worldwide GHG emissions (35 percent). In 2004, the U.S. EPA estimates that GHG emissions in the U.S. were 7074.4 Tg of CO_2 equivalent, which is an increase of 15.8 percent from 1990 emissions. California is a substantial contributor of GHG as the State is the second largest contributor in the U.S. and the sixteenth largest in the world. In 2004, California is estimated to have produced seven percent of the total U.S. emissions. The major source of GHG in California is transportation, which contributes 41 percent of the State's total GHG emissions, followed by electricity generation, which contributes 22 percent of the State's GHG emissions.

Global Changes: The Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007[7] report indicates that the average global temperature is likely to increase between 3.6 and 8.1 degrees Fahrenheit by the year 2100, with larger increases possible but not likely. Temperature increases are expected to vary widely in specific locations depending on a variety of factors. The increase in temperature is expected to lead to higher temperature extremes, a larger variability in precipitation leading to increased flooding and droughts, ocean acidification from increased carbon content, and rising sea levels.

Uncertainty Regarding Global Climate Change: The scientific community has largely agreed that the earth is warming, and that humans are contributing to that change. However, the earth's climate is composed of many complex mechanisms, including: ocean currents, cloud cover, as well as the jet-stream and other pressure/temperature weather guiding systems. These systems are in turn influenced by changes in ocean salinity, changes in the evapotranspiration of vegetation, the reflectivity (albedo) of groundcover, as well as numerous other factors. Some changes have the potential to reduce climate change, while others could form a feedback mechanism that would speed the warming process beyond what is currently projected. The climate system is inherently dynamic; however, the overall trend is towards a gradually warming planet.

Regulatory Context:

International Regulations: In 1988, the United Nations established the Intergovernmental Panel in Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHG's in the United States. The Plan currently consists of more than 50 voluntary programs.

The **Kyoto protocol** is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. Some have estimated that if the commitments outlined in the Kyoto protocol are met, global GHG emissions could be reduced an estimated five percent from the 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments. At the end of 2009, international leaders will meet in Copenhagen to address the future of international climate change commitments post-Kyoto.

Assembly Bill 1493: In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that the Air Resources Board (ARB) develop and adopt, by January 1, 2005, regulations that

[7] Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver and Z.-C. Zhao, 2007: Global Climate Projections. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty truck and other vehicles determined by the ARB to be vehicles whose primary use is noncommercial personal transportation in the state.” Currently, the State is waiting for a determination on the State’s request for a waiver from the USEPA to begin regulation of GHG emissions from vehicles.

Executive Order S-3-05: In 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established total greenhouse gas emission targets. Specifically, emissions are to be reduced to year 2000 levels by 2010, the 1990 levels by 2020, and to 80 percent below the 1990 levels by 2050. The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary is also directed to submit biannual reports to the governor and State legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California’s resources; and (3) mitigation and adaptation plans to combat these impacts.

To comply with the Executive Order, the Secretary of the CalEPA created a Climate Action Team (CAT) made up of members from various State agencies and commissions. The CAT released their first report in March 2006. In addition, the CAT has released several “white papers” addressing issues pertaining to the potential impacts of climate change on California.

Assembly Bill 32: In September 2006, Governor Schwarzenegger signed Assembly Bill (AB) 32, the California Climate Solutions Act of 2006 (Stats. 2006, ch. 488) (Health & Saf. Code, § 38500 et seq.). This bill requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. Assembly Bill 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 delegated the authority for its implementation to the California Air Resources Board (CARB) and directs CARB to enforce the statewide cap that would begin phasing in by 2012. Among other requirements, AB 32 required CARB to (1) identify the statewide level of greenhouse gas emissions in 1990 to serve as the emissions limit to be achieved by 2020, and (2) develop and implement a Scoping Plan to be implemented by January 1, 2012. Currently, GHG levels have been estimated at 600 MMTs of CO2 equivalent while 1990 levels have been estimated to be 427 MMTs. Accordingly, emissions need to be reduced by 173 MMTs by 2020.

On December 11, 2008, CARB adopted a scoping plan to reduce GHG emissions to 1990 levels. The Scoping Plan’s recommendations for reducing GHG emissions to 1990 levels by 2020 include emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, as well as Voluntary Early Actions and Reductions. CARB has until January 1, 2011, to adopt the necessary regulations to implement that plan. Implementation of individual measures must begin no later than January 1, 2012, so that the emissions reduction target can be fully achieved by 2020. CARB is currently drafting regulations to implement the plan.

Senate Bill 97: AB 32, however, did not amend CEQA or establish regulatory standards to be applied to new development or environmental review of projects within the State. Accordingly, the Legislature adopted Senate Bill 97 (SB 97) in August 2007. SB 97 requires the California Office of Planning and Research (OPR) to prepare and transmit new CEQA guidelines for the mitigation of GHG emissions or

the effects of GHG emissions to the Resources Agency by July 1, 2009. These guidelines for mitigation must address, but are not limited to, GHG emissions and effects associated with transportation and energy consumption. Following receipt of these guidelines, the Resources Agency must certify and adopt the guidelines prepared by OPR.

Governor's Office of Planning and Research (OPR) Technical Advisory and Draft CEQA Guidelines
OPR released 2010 CEQA Guidelines include amendments for greenhouse gas emissions. Of note, the guidelines state that a lead agency shall have discretion to determine whether to use a quantitative model or methodology or, alternatively, rely on a qualitative analysis or performance based standards. The CEQA Guideline § 15064.4(a) states, "A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which methodology to use […]; or (2) Rely on a qualitative analysis or performance based standards."

In the CEQA Guideline amendments, OPR does not identify a threshold of significance for greenhouse gas emissions, nor does it prescribe assessment methodologies or specific mitigation measures. Instead, it calls for a "good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The Guidelines amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also permit the lead agency to adopt a threshold of significance that it determines applies to the project and encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The June 2008 Technical Advisory encourages lead agencies to follow three basic steps: (1) identify and quantify the greenhouse gas emissions that could result from the proposed project; (2) analyze the effects of those emissions and determine whether the effect is significant, and (3) if the impact is significant, identify feasible mitigation measures or alternatives that will reduce the impact below a level of significance.

Senate Bill (SB) 1368 (Stats. 2006, ch. 598) (Pub. Util. Code §§ 8340-8341) is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. Senate Bill 1368 requires the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for baseload generation from investor owned utilities by February 1, 2007. The California Energy Commission (CEC) must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural gas fired plant. On January 27, 2007, the PUC adopted an interim Greenhouse Gas Emissions Performance Standard to require that all new long-term commitments for baseload power generation to serve Californians do not exceed the emissions of a combined cycle gas turbine plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

Senate Bill 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 107 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year. The outcome of this legislation will impact regional transportation powered by electricity.

Executive Order S-01-07: On January 18, 2007, Governor Schwarzenegger signed Executive Order S-01-07, which mandates that a statewide goal be established to reduce carbon intensity of California's

transportation fuels by at least 10 percent by 2020. The Order also requires that a Low Carbon Fuel Standard for transportation fuels be established for California.

Senate Bill 375: In September 2008, Governor Schwarzenegger signed Senate Bill (SB) 375, which is intended to build on AB 32 by attempting to control GHG emissions by curbing sprawl. SB 375 enhances ARB's ability to reach goals set by AB 32 by directing ARB to develop regional GHG emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. In addition, ARB will work with the State's 18 metropolitan planning organizations to align their regional transportation, housing, and land-use plans and prepare a "sustainable communities strategy" to reduce the amount of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its greenhouse gas reduction targets. SB 375 provides incentives for creating walkable and sustainable communities and revitalizing existing communities, and allows home builders to get relief from certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Furthermore, SB 375 encourages the development of alternative transportation options, which will reduce traffic congestion.

Existing Setting:
The 160-acre project site is located on four component parcels between 36 and 40 acres in size owned by the Port of West Sacramento. The site is located approximately six miles southwest of the California state capitol (in the City of West Sacramento and unincorporated Yolo County) and eight miles southeast of the City of Davis. The site is currently vacant land and, therefore, does not currently produce any GHG emissions.

Discussion

a, b. The proposed project includes operation of four 6,000 kW, grid-paralleled, photovoltaic, solar electric generating systems. The solar systems themselves would not result in any GHG emissions; however, maintenance/service crews would be needed throughout the year to perform standard operational maintenance and repair on the solar units and site, as needed. The Urbemis 2007 program was used to estimate operational emissions from the site (including carbon dioxide emissions) using conservative assumptions for worker trips. The estimated CO_2 emissions from operation of the proposed project are 2.62 tons/year (2.38 metric tons).

As calculated using the U.S. EPA's *Greenhouse Gas Equivalencies Calculator*,[8] implementation of the proposed project would avoid 34,472 metric ton equivalent (MTE) of CO_2 emissions. Therefore, the proposed project would result in a net reduction of GHG emissions for the site of approximately 34,469.62 MTE of CO_2.

With the reduction in GHG emissions associated with the proposed project, the project would not conflict with any applicable plans, policies or regulations adopted for the purpose of reducing the emissions of GHGs. Furthermore, the proposed project would be consistent policies and aid in the achievement of the goals identified in GHG related regulation, including AB 32 and SB 1078. Therefore, the proposed project would result in ***no impact*** regarding generation of greenhouse gas emissions (either directly or indirectly) that may have a significant impact on the environment or conflicting with any applicable plans, policies or regulations adopted for the purpose of reducing the emissions of GHGs.

[8] United States Environmental Protection Agency website, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, accessed March 2010.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
8. HAZARDS & HAZARDOUS MATERIALS. *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Background

According to the geotechnical report (see Section 6, Geology & Soils), one random sample obtained from each of the three test pits at the borrow area were subjected to chemical testing in order to evaluate the initial environmental characteristics of the sampled soils. All test results indicate ND (analyte not detected at or above the test method reporting limit) for chemical compounds within the soils, which were tested except for some indicators of the presence of heavy metals.

As a reference, the Environmental Screening Levels (ESLs) related to heavy metals for shallow soils (equal or less than 10 feet below the ground surface) for commercial/industrial land use only with groundwater not a current or potential source of drinking water conditions, are utilized here for discussion purposes. The ESLs are established by the California Regional Water Quality Control Board (CRWQCB).

All of the reported heavy metals are below the ESLs, except Arsenic (4.2 to 5.6 mg/kg, slightly higher than ESL of 1.6 mg/kg) for all three samples tested and Nickel (220 mg/kg, slightly higher than ESL of 150 mg/kg) for the sample obtained from BAT3 test pit. Naturally occurring background concentrations of chemical compounds were not directly considered in development of the ESLs. It is not uncommon that background concentrations naturally present at sites are much higher than ESLs. Background concentrations of heavy metals from dredge materials (such as at the proposed borrow site) are typically higher than original soils. According to the geotechnical report, and in considering the proposed land use regardless of the background concentrations of heavy metals, the reported concentrations of Arsenic and Nickel in the tested samples would not pose a significant risk to human or ecological receptors.

Discussion

a. During construction of the proposed project, potentially hazardous liquid materials such as oil, diesel fuel, gasoline, and hydraulic fluid could be used at the site in construction equipment. If spilled, these substances could pose a risk to the environment and to human health. The use, handling, and storage of hazardous materials is regulated by both the Federal Occupational Safety and Health Administration (Fed/OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA). Cal/OSHA is responsible for developing and enforcing workplace safety regulations. Both federal and State laws include special provisions/training for safe methods for handling any type of hazardous substance. Operation of the proposed project would not involve the use of hazardous materials. Because routine transport, use, and disposal of hazardous materials are regulated by existing federal, State, and local regulations, and operation of the proposed project would not use hazardous materials, this impact is considered ***less than significant***.

b. Operation of the proposed project would not result in the use or storage of hazardous materials. There would be ***no impact***.

c. The proposed project would not use hazardous materials and would not be located within ¼-mile of a school. There would be ***no impact***.

d. The proposed project site is not included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 (EnviroStor Database, formerly known as the Cortese List)[9] and would not result in the creation of a significant hazard to the public or the

9 Department of Toxic Substances Control, EnviroStor Database, formerly the Cortese List, <http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm> (April 9, 2008).

environment as a result of project approval or site development and construction. Therefore, there would be ***no impact***.

e, f. The proposed project site is approximately fourteen miles from the Sacramento International Airport, approximately seven miles from the Sacramento Executive Airport, and there are no private airstrips within the vicinity of the project site. Therefore, there would be ***no impact*** related to aeronautical safety hazards for workers occupying the project site.

g. The project area does not contain any emergency evacuation routes and thus construction and operation of the project would not interference with any emergency responses plans. Therefore, there would be ***no impact***.

h. The draft General Plan background report indicates that the project area is considered to have a moderate risk of fire threat (Figure 9-4, Fire Threat). Given that the project does not involve any structures designed for human occupancy, impacts with respect to wildland fire risk are considered to be ***less than significant.***

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
9. HYDROLOGY AND WATER QUALITY. *Would the project:*				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h) Place within a 100-year floodplain structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☒	☐	☐

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Background

Water Quality: Development of the proposed project includes grading and compaction of soils adjacent to and east of the Deep Water Ship Channel (DWSC) navigation levee. The project site currently drains into the DWSC, which flows to the Sacramento Delta. The Central Valley Regional Water Quality Control Board (RWQCB) has primary responsibility for protecting the quality of surface water and groundwater within the City, including the project site and the DWSC. The RWQCB's efforts are generally focused on preventing either the introduction of new pollutants or an increase in the discharge of existing pollutants into bodies of water that fall under the jurisdiction of the RWQCB. The RWQCB is concerned with all potential sources of contamination that may reach both these subsurface water supplies and rivers through direct surface runoff or infiltration. City-wide stormwater runoff is collected in City drainage facilities and is sent directly to the Sacramento River, Yolo Bypass, Main Drain Canal, and DWSC. The RWQCB implements water quality standards and objectives in keeping with the State of California Standards.

The City of West Sacramento has obtained a Small MS4 General National Pollution Discharge Elimination System (NDPES) Permit from the State Water Resources Control Board (SWRCB) that requires the reduction of pollutant discharges from municipal drainage systems into local waterways to the maximum extent practicable. A small ms4 is a municipal separate storm conveyance sewer system owned or operated by municipalities, townships, counties, military bases, hospitals, prison complexes, highway departments, or universities, having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes. The project would be required to comply with the City Stormwater Management Program (SWMP) Planning Document which maintains the high quality of local water resources and ensures compliance with the NPDES permit. The comprehensive SWMP includes seven program elements: public education and outreach, public involvement and participation, illicit discharges, construction activities, new development and redevelopment, municipal operations, and industrial facilities.

Project compliance with the SWMP would also require the use of BMPs to reduce pollutant discharges during and after construction. These practices include erosion and sediment control measures and housekeeping practices during construction and source control and/or treatment control measures to minimize the increase in urban runoff pollution caused by development of the area. Construction and post-construction BMPs minimize erosion and sedimentation and prevent pollutants such as oils and grease from entering the storm drain system. Project BMPs would be approved by the Community Development Department before issuance of grading permit or approval of the improvement plans.

Groundwater: The groundwater aquifer system underlying the West Sacramento region is part of the larger Central Valley groundwater basin. Deep percolation of precipitation and surface water applied to irrigated cropland recharges the system. Groundwater is depleted by pumped extractions of groundwater for municipal, industrial, and agricultural purposes.

Drainage: The stormwater drainage system of the City of West Sacramento is a complex network of natural channels, canals, levees, subsurface drains, and pumping stations. All drainage ultimately flows to the Yolo Bypass and Sacramento River. However, the project site is adjacent to a levee that currently drains into the DWSC, which flows to the Sacramento Delta. Development of the project includes grading and compacting of soils to match the existing levee elevation and construction of

solar panels, which could alter the drainage of the levees and adjacent areas.

Flooding: Substantial areas in Yolo County are subject to flooding. The Federal Emergency Management Agency (FEMA) indicates that a majority of the County's creek and river areas lie within the 100-year floodplain. Areas deemed to be within the 100-year floodplain are subject to flooding during a storm likely to occur once every 100 years, on average. The Flood Insurance Rate Map (FIRM Map Number 060728 0010 B revised January 19, 1995) indicates that the project site is currently designated as Zone X. Zone X is the flood insurance rate zone that corresponds to areas of 500-year flood, areas of 100-year flood with average depths of less than one foot or with drainage areas of less than one square mile, and areas protected by levees from100-year flood. Although the project site is not within a flood zone, construction activities could affect the stability of the levees.

Discussion

a, f. The proposed project includes the construction of approximately 27,216 solar panels on approximately 160 acres adjacent to the DWSC navigation levee. Development of the project would require construction of infrastructure improvements, including grading, compacting, and import of soils from a nearby borrow site. Wind could blow loose soil particles from the project site into the DWSC. Construction site runoff can contain soil particles and sediments from these activities. Spills and leaks from heavy equipment and machinery, or staging areas can enter run off. Typical pollutants could include petroleum products and heavy metals from equipment products. Sediment from erosion of graded or excavated surface materials, or leaks or spills from equipment could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. In addition, the project is adjacent to and directly drains to the DWSC. Therefore, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which would adversely affect water quality. After the infrastructure improvements are completed, the project site would maintain pervious surfaces with the addition of solar panels. Operation of the solar panels would not require the use of water or generate wastewater. In addition, the solar panels and trackers would not generate pollutants that would degrade water quality. Therefore, operation of the project would not violate any water quality standards or waste discharge requirements.

Because the proposed project would require construction activities resulting in a land disturbance of more than 160 acres, the applicant is required by the State to obtain the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP would incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest feasible extent, adverse impacts to water quality from erosion and sedimentation. Potential BMPs may include: scheduling or limiting construction activities to certain times of year, prohibitions of practices, maintenance procedures, installation of silt fences, hydroseeding, hydraulic mulch, soil binders, straw mulch, fiber rolls, earthen dikes and drainage swales, velocity dissipation devices, sediment traps, inlet filters, tire washes and other management practices that could be used during construction of the proposed project (California Stormwater Quality Association's *Stormwater Best Management Practices Handbook for Construction*, January 2003*)*. It should be noted that a 2009 *Stormwater Best Management Practices Handbook* was developed to complement the new State Construction General Permit that takes effect July 2010.

The proposed project would be subject to the requirements of the SWRCB, the RWQCB, and the City's Storm Water Management Program. Should the proposed project not comply with State and local regulations concerning stormwater pollution, the project's construction activities would result in degradation of downstream water quality. Therefore, a ***potentially significant*** impact could occur. However, implementation of the following mitigation measure would reduce the above impact to a ***less than significant*** *level.*

Mitigation Measure No. HYD-1
Prior to issuance of grading permit, the applicant shall obtain a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to ground disturbance. The SWPPP would incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest extent feasible, adverse impacts to water quality from erosion and sedimentation. A copy of the SWPPP including BMP implementation provisions shall be submitted to the Chief Building Official.

b-e. The project site currently drains to the DSWC. The project includes import of soil from a nearby borrow site, compacting, grading of the project site. Each earthen foundation pad for the four project sites would be filled, compacted, and graded to match the existing levee elevation. Although the project includes construction of an earthen foundation, infrastructure improvements, and solar panels, development of the site would not alter the drainage pattern because a majority of the site would remain as pervious surfaces, water would percolate through the soils, and would drain to the DWSC. In addition, water would drain from each individual solar panel to pervious surfaces below. Thus, development to the project would not alter the amount of runoff from the site. In addition, the development of the project does not include construction of a substantial amount of impervious surfaces that would impact groundwater recharge. Therefore, the ultimate drainage, groundwater recharge, and runoff would not be altered and impacts related to groundwater recharge, drainage, and runoff would be considered ***less than significant.***

g, h. The proposed project includes the construction of approximately 27,216 solar panels and does not include the construction of residential units. In addition, construction of the earthen pads, trackers, and solar panels would not impede or redirect flood flows, resulting in a ***less than significant*** impact.

i. The project site is located adjacent to the DWSC navigation levee and Yolo Bypass, which provide flood protection for the surrounding areas. The proposed project site is located within Flood Zone X, as designated by FEMA. As discussed above, Flood Zone X is the flood insurance rate zone that corresponds to areas of 500-year flood, areas of 100-year flood with average depths of less than one foot or with drainage areas of less than one square mile, and areas protected by levees from 100-year flood. Because the project site is located within Zone X and would be located on top of certified levees, the impact of flooding on the proposed project would be less than significant. The project includes construction activities along the levees between the DWSC and Yolo Bypass. The levees are under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and Central Valley Flood Protection Board (CVFPB). Although unlikely, development of the project includes compaction and earth moving of the project site that could impact the stability of the levee. The project applicant would be required to obtain applicable permits from the USACE and CVFPB. Conditions placed on the issuance

of permits by USACE and CVFPB would ensure protection of the levees and consistency with the Central Valley Flood Management Plan. Therefore, without permits from USACE and CVFPB, development of the project could impact the levee, resulting in a ***potentially significant*** impact related to significant risk of loss, injury death involving flooding, as a result of the failure of a levee. However, implementation of the following mitigation measure would reduce the above impact to a ***less than significant*** *level.*

Mitigation Measure No. HYD-2
Prior to commencement of construction activities, the applicant shall submit proof of permits from the U.S. Army Corps of Engineers and Central Valley Flood Protection Board to the Community Development Department.

j. A seiche is a long wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, whose destructive capacity is not as great as that of tsunamis. Seiches are known to have occurred during earthquakes, but none have been recorded in the Yolo County area. Tsunamis are defined as sea waves created by undersea fault movement. A tsunami poses little danger away from shorelines; however, when it reaches the shoreline, a high swell of water breaks and washes inland with great force. Waves may reach fifty feet in height on unprotected coasts. Historic records of the Bay Area used by one study indicate that nineteen tsunamis were recorded in San Francisco Bay during the period of 1868-1968. Maximum wave height recorded at the Golden Gate tide gauge, where wave heights peak, was 7.4 feet. The available data indicate a standard decrease of original wave height from the Golden Gate to about half original wave height on the shoreline near Richmond, and to zero at the head of the Carquinez Strait. The proposed project is several miles inland from the Carquinez Strait and would not be impact by a tsunami. Because mudflows typically occur in mountainous or hilly terrain, and the project site and surrounding areas are relatively flat, the risk of impacts from mudflows would be negligible. The project site is not located within an area that would be affected by a seiche, tsunami, or mudflow; therefore, ***no impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
10. LAND USE AND PLANNING. *Would the project:*				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating on environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a. The proposed project would be located adjacent to and east of the Deep Water Ship Channel (DWSC) navigation levee. Therefore, the proposed project would not divide an established community, and ***no impact*** would occur.

b. The project site is located on property subject to the jurisdiction of the City of West Sacramento, including City of West Sacramento ordinances, goals, and policies. It is also subject to the jurisdiction of Yolo County. The proposed project consists of the addition of a solar power facility east of and adjacent to the DWSC navigation levee. The proposed project does not conflict with any applicable land use plan, policy, or regulation, or any agency with jurisdiction over the project, and ***no impact*** would occur.

c. No habitat conservation plans or natural community conservation plans have been adopted by the City of West Sacramento or Yolo County that could affect the proposed project site. Therefore, the proposed project would not conflict with any habitat conservation plans, and ***no impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
11. MINERAL RESOURCES. *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

Discussion

a, b. The Surface Mining and Reclamation Act, enacted in 1975, provides for the reclamation of mined lands and directs the State Geologist to classify (identify and map) the non-fuel mineral resources of the state to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. Areas known as Mineral Resource Zones (MRZs) are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four general classifications (MRZ-1 through MRZ-4).[10]

The proposed project site is classified Mineral Resource Zone 1 and 3 (MRZ-1 and MRZ-3) by the California Division of Mines and Geology,[11] which means that aggregate deposits of undetermined significance could occur. Lands with a MRZ-3 are not affected by State policies pertaining to the maintenance of and access to regionally significant mineral deposits. The project site has been previously disturbed for the construction of the Deep Water Ship Channel levee; no mineral resources of regional, State, or local importance were encountered during the construction of the facility, and no mineral resources would likely be encountered during construction of the facility. For these reasons, the proposed project's impacts on mineral resources would be considered ***less than significant***.

10 California Department of Conservation, Division of Mines and Geology, *Guidelines for Classification and Designation of Mineral Lands*, <http://www.consrv.ca.gov/smgb/guidelines.htm> (March 5, 2007).

11 West Sacramento, *City of West Sacramento General Plan Background Report*, Revised and Adopted June 14, 2000, Figure 8-8.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
12. NOISE. *Would the project result in:*				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a, c. Operation of the facility is not expected to generate noise beyond ambient levels as measured at the nearest residential receivers in the Bridgeway Island and Bridgeway Lakes neighborhoods. Therefore there would be ***no impact.***

b. The heavy equipment used for construction of the proposed project and the trucks carrying building supplies to the project site would generate groundborne vibration in the areas adjacent to their use. Construction vibration would be significant if its frequency of occurrence and level exceed those presented in Table 6. Table 7 identifies vibration velocity levels at various distances from the types of construction equipment that would potentially be used during the construction of the proposed project. No pile driving would occur for project construction.

TABLE 6

GROUND-BORNE VIBRATION (GBV) IMPACT CRITERIA FOR GENERAL ASSESSMENT

Land Use Category	GVB Impact Levels (VdB re 1 micro-inch/second)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65[4]	65[4]	65[4]
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime uses.	75	78	83

Notes:
1 "Frequent Events" is defined as more than 70 vibration events of the same source per day.
2 "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
3 "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
4 This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.
Source: Federal Transit Administration, *Transit Noise Impact and Vibration Assessment*, May 2006.

TABLE 7

VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

	Approximate VdB				
	25 Feet	50 Feet	100 Feet	200 Feet	500 Feet
Large Bulldozer	58	49	40	31	19
Loaded Trucks	87	78	69	60	48
Jackhammer	79	70	61	52	40
Small Bulldozer	86	77	68	59	47

Source: Charles M. Salter Associates, Inc., 2008.

Table 7 shows that construction equipment and truck vibration levels would fall below any of the significance criteria identified in Table 4 at distances of 100 feet or greater from the identified vibration sources. The closest residential receivers (*i.e.,* Bridgeway Island and Bridgeway Lakes) are over 1,000 feet from the project site. Consequently, groundborne vibration levels at these residential receivers will be substantially below the impact criteria and would be ***less than significant***.

d. Construction noise levels would fluctuate depending on the particular type, number, and duration of use of equipment used for project construction. Table 6 provides noise levels generated by typical construction equipment. The severity of construction noise impacts of the proposed project would depend upon the distance between the construction site and the nearest noise-sensitive uses, and on the existing noise levels at those uses. Typical hourly average L_{eq} construction-generated noise levels would range between 81 dBA and 89 dBA at a distance of 50 feet from the center of the site, but the closest residential receivers are located over 1,000-feet away from the project site. Adjusting for distance, construction noise levels in these residential areas would range between 53 dBA and 61 dBA. In this range, there may be short-term noise effects related to construction, but they would be of limited duration. Nonetheless, this temporary increase in ambient noise levels in the project vicinity due to construction would be ***potentially significant***. However, Mitigation Measure NOI-1 would be implemented to reduce potential impacts to a ***less-than-significant*** level. The impact, therefore, is considered less than significant with mitigation incorporated.

TABLE 8

TYPICAL CONSTRUCTION NOISE LEVELS

Equipment	Noise Level at 50 feet (dBA)
Earthmoving	
Front Loader	79
Backhoe	85
Dozer	80
Tractor	80
Scraper	88
Grader	85
Paver	89
Materials Handling	
Concrete Mixer	85
Concrete Pump	82
Crane	83
Stationary	
Pump	76
Generator	78
Impact	
Drilled Piles	85
Impact Pile Driver	101
Jack Hammer	88
Pneumatic Tools	86
Other	
Framing	95
Saw	78
Vibrator	76
Source: U.S. Environmental Protection Agency, 1971.	

Mitigation Measure No. NOI-1

Implement the following construction best management practices to reduce construction noise.

(a) Standard construction activities shall be limited to between 7:00 a.m. and 7:00 p.m., seven days per week.

(b) Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.

(c) Construction vehicles shall be required to turn off engines and compressors when not in operation for more than ten minutes.

(d) Where reasonable, avoid hammer drilling; use core bits, instead.

(e) Where possible, avoid using powder-actuated fasteners; use concrete screws, instead.

(f) Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the

compressed-air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible, which could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible.

(g) Stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed within temporary sheds, or insulation barriers or other measures shall be incorporated to the extent feasible.

e. There are no airports in the City, but aircraft operating from Sacramento International Airport pass over and near West Sacramento. According to the Sacramento International Airport Comprehensive Land Use Plan, the 60 dBA CNEL contour for current airport operations includes most of the City north of US-50. The Federal Aviation Administration Aviation Regulations (FAR) Part 150 Airport Noise Compatibility and Land Use Planning include noise/land use compatibility guidelines. The FAR guidelines offer recommendations to local authorities for determining the compatibility of various land uses with aircraft-induced noise (using DNL or CNEL as the descriptor of exposure) and specify requirements for additional acoustic insulation for buildings in areas where the aircraft-induced noise exceeds specified levels. Under the FAR Part 150 guidelines, all land use categories are compatible with aircraft noise exposures below 65 dBA CNEL. Since the project site does not fall within the Airport's 65 dB CNEL contour and is not designed for human occupancy, the proposed project would be compatible with noise from Sacramento International Airport's aviation traffic and its impact would be ***less than significant***.

f. The proposed project is not located near a private airstrip, and there would be ***no impact***.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
13. POPULATION AND HOUSING. *Would the project:*				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a - c. The proposed project consists of development of solar arrays adjacent to and east of the Deep Water Ship Channel navigation levee that will be unmanned except for periodic maintenance visits. This increase would not induce substantial population growth in the area. The project would not result in the extension of roads or other infrastructure other than connections to existing overhead power lines. Consequently, the proposed project would not result in a substantial direct or indirect increase in population, nor would it displace existing housing or people or facilitate the development of new residential units elsewhere. Therefore, there would be ***no impacts*** related to population growth and housing.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
14. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☒	☐
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

Discussion

a. Fire protection services to the project site are provided by the West Sacramento Fire Department. The West Sacramento Fire Department has the mission of protecting life, environment, and property within the City of West Sacramento. The Department has five fire stations throughout the City which house five front line fire engines and one ladder truck equipped to handle a variety of emergency calls. The five fire stations operate 24 hours a day, 7 days a week with a combined staffing of nineteen personnel on duty. A Division Chief is assigned as Duty Chief to respond to all structure fires and other major emergencies to provide Incident Command and Scene Management.[12] The project does not include any structures designed for human occupancy nor will it use any acutely hazardous materials. Therefore impacts to fire protection would be ***less than significant*** and no mitigation is required.

b. Police services to the project site are provided by the West Sacramento Police Department. The Police Department provides a full range of police services to the residents of West Sacramento 24 hours a day, 7 days a week. The department is responsible for patrolling city neighborhoods, responding to calls for service, investigating crime and arresting offenders and working closely with the community to identify and solve problems of crime and neighborhood disorder. The Department is staffed with 77 sworn officers and 39 civilian full-time employees.[13] Construction of the project will not require expansion of new police facilities as

12 West Sacramento Fire Department <http://www.cityofwestsacramento.org/cityhall/departments/fire> (March 1, 2010).
13 West Sacramento Police Department <http://www.cityofwestsacramento.org/cityhall/departments/police> (April 23, 2010)

the project will include security measures. Therefore, impacts to police services would be ***less than significant*** and no mitigation is required.

c. The proposed project consists of development of a solar power plant adjacent to and east of the Deep Water Ship Channel (DWSC) navigation levee. The proposed project does not include the addition of residents to the area and would not create the need for additional school facilities. Therefore, ***no impact*** would occur.

d, e. The proposed project consists of development of a solar power plant adjacent to and east of the DWSC navigation levee. The proposed project would not result in a need for new or altered maintenance or public services, including parks, because it would not add new population to the area. Therefore, ***no impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
15. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a, b. The proposed project would not add new population to the area. Therefore, the project would not increase the use of existing neighborhood and regional parks, nor would it include recreational facilities or require the construction or expansion of recreational facilities, and ***no impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
16. TRANSPORTATION/TRAFFIC. *Would the project:*				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (*e.g.,* bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion

a, b. The facility would be unmanned and be limited to periodic visits by maintenance personnel. Access to the site is provided at the westerly terminus of Channel Drive west of Enterprise Blvd. Truck trips during construction are described in the Air Quality discussion above. As these truck trips would be limited to construction of the facility, estimated to take one year to complete, and the facility would be unmanned during operation no substantial increase in traffic would occur and therefore impacts would be ***less than significant.***

c. The proposed project would not generate air traffic nor affect air traffic activities. The proposed project is located outside the Sacramento International Airport clear, approach and over-flight zones. Therefore, there would be ***no impact***.

d. No new roads or incompatible uses are proposed for the proposed project. Therefore, there would be ***no impact***.

e. The proposed project would not change access for use by emergency vehicles and would not obstruct access to nearby land uses. Therefore, ***no impact*** related to emergency or adjacent site access would occur.

f. The proposed project will be unmanned and would only received periodic visits by maintenance personnel. Therefore parking demand will be nominal and ***no impact*** would occur.

g. The proposed project would not remove, block, or otherwise interfere with existing bus turnouts or bicycle racks and would not conflict with adopted alternative transportation policies, plans, or programs. Therefore, ***no impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
17. UTILITIES AND SERVICE SYSTEMS. *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes, and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a, b, e. The project would not generate wastewater and thus would not violate any wastewater treatment standards or require new wastewater treatment facilities. ***No impact*** would occur.

c. No new storm drainage facilities would be required for the project and therefore ***no impact*** would occur.

d. The project would not require water service and therefore there would be ***no impact.***

f, g. The project would not generate solid waste other than from periodic maintenance visits, which is expected to be nominal. Any solid waste generated during operation would have to be removed by maintenance personnel and disposed of at an approved location. ***No impact*** would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
18. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a. The proposed project would have a low potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. In addition, the City's incorporation of mitigation measures adopted as part of the proposed project would minimize the impacts on the environment. This impact is considered ***less than significant***.

b, c. The proposed project would result in short-term construction-related impacts on the environment (e.g. construction emissions) and human beings (e.g. construction noise) that have all been reduced to less-than-significant levels with the incorporation of mitigation measures. Although these impacts may increase the magnitude of the short-term impacts when combined with the impacts of other public utility improvement or repair projects, cumulative impacts are considered ***less than significant***.

DRAFT MITIGATION MONITORING AND REPORTING PLAN FOR THE OPDE SOLAR POWER PROJECT				
Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
Conflict with or obstruct implementation of the applicable air quality plan. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	*Mitigation Measure No. AQ-1* *Prior to commencement of any ground disturbing activities, the applicant shall submit a dust control plan to the City Engineer and the Yolo-Solano Air Quality Management District. This plan shall ensure that adequate dust controls are implemented during all phases of project construction. The YSAQMD best available control measures for fugitive dust shall include, but not be limited to, the following:* • *Apply nontoxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas inactive for ten days or more);* • *Reestablish ground cover in disturbed areas quickly;* • *Water recently disturbed construction areas (ground disturbed within 10 days) three times daily to avoid visible dust plumes;* • *Apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites;* • *Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);* • *Enforce a speed limit of 15 MPH for equipment and vehicles operated in unpaved areas;* • *All vehicles hauling dirt, sand, soil, or other loose materials shall be covered or should maintain at least two feet of freeboard; and* • *Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads.* *Mitigation Measure No. AQ-2* *The project developer shall be responsible for ensuring that contractors reduce ROG, NO_X, and CO emissions by complying with the construction vehicle air pollutant control strategies developed by the YSAQMD. Construction contracts shall include the following requirements:* • *Construction equipment operators shall shut off equipment when not in use to avoid unnecessary idling. As a general rule, vehicle idling should be kept below five minutes.* • *During grading of each site, all on-site diesel–powered equipment, including excavators, graders, rubber tired dozers, scrapers, tractors/loaders/backhoes, and water trucks shall use*	Project Proponent	Ongoing during project construction	The City of West Sacramento Community Development Department

ATTACHMENT 6

DRAFT MITIGATION MONITORING AND REPORTING PLAN FOR THE OPDE SOLAR POWER PROJECT				
Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	only aqueous diesel fuel. • *Construction equipment shall be properly maintained and in good operating condition.* • *During smog season (May through October), the construction period shall be lengthened from 7 a.m. to 7p.m. to minimize the number of vehicles and equipment operating at the same time.* • *Contractors shall utilize new technologies to control ozone precursor emissions as they become available and feasible.*			
Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).	*AQ-3: Comply with MM AQ-1 and AQ-2.*	Project Proponent	Ongoing during project construction	The City of West Sacramento Community Development Department
Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	*Mitigation Measure No. BIO-1* *Prior to any surface disturbance activities (grading, excavation or construction) on non-paved areas, the developer shall implement the following measures, or measures which may be adopted through the Yolo County Natural Heritage Program (NHP) Plan, to avoid any impacts to Giant Garter Snake and the habitat upon which it relies, or shall mitigate potential impacts to the satisfaction of the California Department of Fish and Game.* *a) Construction activities would be conducted only between May 1 and October 1. This is the active period for giant garter snake and direct mortality is lessened, because snakes can be detected, and can move out of the way of machines and people to avoid injury or death.* *b) Twenty-four (24) hours prior to construction activities, the project area would be surveyed by a qualified biologist for giant garter snakes and habitat upon which it relies. The survey of the project*	Project Proponent	Ongoing during project construction	The City of West Sacramento Community Development Department

DRAFT MITIGATION MONITORING AND REPORTING PLAN FOR THE OPDE SOLAR POWER PROJECT				
Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	area shall be repeated if a lapse in construction of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it is determined by a qualified biologist that the snake will not be harmed. Sightings and/or incidental harm to snakes shall be immediately reported to the U.S. Fish and Wildlife Service, City of West Sacramento Community Development Department, and the County of Yolo Development Services. *c) Based on the site survey, the qualified biologist will flag and designate snake habitat areas to be avoided within or adjacent to the project area as Environmentally Sensitive Areas (ESAs). These areas must be avoided by construction personnel.* *d) Prior to ground disturbance (grading, excavation and construction), all on-site construction personnel shall be given Fish and Wildlife Service approved Worker Environmental Awareness Program (WEAP) Training by a qualified biologist regarding how to recognize the presence of Giant Garter Snake and the importance of avoiding impacts to these species and their habitats.* *e) In areas where levee toe drains, riverine marsh areas, or other potential giant garter snake habitats are being retained on the site:* *i. Install temporary fencing at the edge of the construction area and the adjacent levee toe drain or marsh.* *ii. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes and levee toe drains.* *iii. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.* *f) After completion of construction activities, all temporary fill and construction debris shall be removed whenever feasible and disturbed areas shall be restored to pre-project conditions.* *g) If construction is proposed between October 2 and April 30, prior to any ground disturbance the project proponent shall conduct a California Department of Fish and Game-recommended protocol level survey. Prior to any ground disturbance or construction, the*			

DRAFT MITIGATION MONITORING AND REPORTING PLAN FOR THE OPDE SOLAR POWER PROJECT				
Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	results of such survey shall be submitted to the City of West Sacramento Community Development Department and County of Yolo Development Services. Prior to any ground disturbance or construction, appropriate mitigation measures to prevent impacts to GGS potentially hibernating in the project area will be implemented, consistent with the findings of the survey. *Mitigation Measure No. BIO-2* *Prior to any surface disturbance activities (grading, excavation or construction) on non-paved areas, the developer shall implement the following measures, or measures which may be adopted through the Yolo County Natural Heritage Program (NHP) Plan, to avoid any impacts to nesting raptors or other migratory bird species and the habitat upon which they rely, or shall mitigate potential impacts to the satisfaction of the California Department of Fish and Game."* *a) Burrowing Owls: Implementation of the following mitigation measures is required, as construction-related activities have the potential to impact Burrowing Owl (Athene cunicularia) and its habitat.* *i. Preconstruction Bird Survey: A qualified biologist or ornithologist will conduct pre-construction breeding season surveys (approximately March 1 and September 15) of the project site and vicinity for nesting burrowing owls. The survey(s) will be conducted no more than 30 days prior to the initiation of construction, during the season immediately preceding grading operations during the breeding season, or when the young are still in burrows and dependent on the parents. If no active burrows are found during the survey(s), no further mitigation will be required and construction activities may proceed unconstrained.* *ii. Nest Avoidance: If active owl burrows are detected on the project site, the Project Applicant shall either: (1) delay construction in the vicinity of active nest sites during the breeding season until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied; or, (2) if the construction cannot be delayed, establish a suitable (e.g. 75 m) non-disturbance, buffer zone around the nest site, delineated by highly-*			

DRAFT MITIGATION MONITORING AND REPORTING PLAN FOR THE OPDE SOLAR POWER PROJECT				
Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	visible, temporary ESA fencing. Active nest burrows in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied. *iii. <u>Burrow Relocation:</u> Following fledging of young, adult owls will be excluded from occupied burrows in the project area by installing one-way doors in burrow entrances, which will be left in place 48 hours to insure owls have left the burrow before excavation and collapse of the existing burrow. An alternate natural or artificial burrow will be provided for in the existing Mitigation Area (between Sites 3 and 4) for each burrow excavated in the project impact zone. The project area will be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.* *b) Nesting Raptors and Other Migratory Bird Species: Implementation of the following mitigation measures is required, as construction-related activities have the potential to impact nesting Swainson's hawks, white-tailed kites, and other raptors (birds of prey).* *i. <u>Preconstruction Bird Survey:</u> A qualified biologist or ornithologist will conduct pre-construction breeding season surveys (approximately March 1 and September 15) of the project site and vicinity for nesting raptors. The survey(s) will be conducted no more than 15 days prior to the initiation of construction, during the season immediately preceding grading operations during the breeding season, or when the young are still in nests and dependent on the parents. If no active nests are found during the survey(s), no further mitigation will be required and construction activities may proceed unconstrained.* *ii. <u>Nest Avoidance:</u> If active bird nests are detected on the*			

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Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	project site, the Project Applicant shall either: (1) delay construction in the vicinity of active nest sites during the breeding season until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied; or (2) establish of a suitable (e.g. 150 m) non-disturbance buffer zone around the nest site delineated by highly visible temporary ESA fencing. Active nest trees in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied. *c) Heron Rookeries: Implementation of the following mitigation measures is required, as construction-related activities have the potential to impact existing great blue heron (Ardea herodias) and black-crowned night heron (Nycticorax nycticorax) rookeries in the project vicinity.* *i. <u>Preconstruction Bird Survey:</u> A qualified biologist or ornithologist will conduct pre-construction breeding season surveys (approximately March 1 and September 15) of the project site and vicinity for active heron rookeries. The survey(s) will be conducted no more than 15 days prior to the initiation of construction, during the season immediately preceding grading operations during the breeding season, or when the young are still in nests and dependent on the parents. If no active nests are found during the survey(s), no further mitigation will be required and construction activities may proceed unconstrained.* *ii. <u>Nest Avoidance:</u> If active heron rookeries are detected on the project site, the Project Applicant shall either: (1) delay construction in the vicinity of active nest sites during the breeding season until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied; or (2) establish of a suitable (e.g. 200 m) non-disturbance buffer zone around the rookery delineated by highly visible temporary ESA fencing*			

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Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	(when/if placement of ESA fencing will not, in itself, disrupt heron nesting.) Active nest trees in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until it has been determined by a qualified biologist that the young have fledged/the nest is no longer occupied.			
Disturb any human remains, including those interred outside of formal cemeteries?	*Mitigation Measure No. CR-1* *(a) In the event that any subsurface archaeological or paleontological resources are discovered during construction-related earth-moving activities, all ground-disturbing activity within 100 feet of the resources shall be halted immediately, and the City of West Sacramento Community Development Department shall be notified immediately. Depending on the nature of the find (i.e., archaeological or paleontological resource), the project proponent shall retain a professional archaeologist or paleontologist. The Community Development Department will consult with the archaeologist or paleontologist to assess the significance of the find. Impacts on any significant resources shall be mitigated through methods determined adequate by the Community Development Department, including but not limited to data recovery or capping of the site.* *(b) If human remains are discovered during any demolition/construction activities, all ground-disturbing activity within fifty feet (50') of the remains shall be halted immediately, and the Yolo County coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The project proponent shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archaeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The*	Project Proponent	Ongoing during project operation	The City of West Sacramento Community Development Department

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Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	Community Development Department will be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines §15064.5(e) and Public Resources Code §5097.98. The project proponent shall implement approved mitigation in accordance with the aforementioned requirements, to be verified by the Community Development Department, before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.			
Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death.	*Mitigation Measure No. GEO-1* *Prior to approval of Improvement Plans, the project applicant shall demonstrate on the Improvement Plans that all of the recommendations within the Geotechnical Investigation and Limited Environmental Testing Report prepared by MatriScope Engineering Laboratories, Inc. shall be incorporated into foundation and structure design, as well as the design of any roadway or infrastructure improvements, for the review and approval of the City Engineer.*	Project Proponent	Prior to approval of improvement plans	The City of West Sacramento Community Development Department
Result in substantial soil erosion, or the loss of topsoil.	*Mitigation Measure No. GEO-2* *Prior to issuance of grading permit, the applicant shall obtain a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to ground disturbance. The SWPPP would incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest extent feasible, adverse impacts to water quality from erosion and sedimentation. A copy of the SWPPP including BMP implementation provisions shall be submitted to the Chief Building Official.*	Project Proponent	Prior to issuance of grading permit	The City of West Sacramento Community Development Department

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Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
Be located on expansive soils, as defined in Table 18-1-13 of the Uniform Building Code (1994), creating substantial risks to life or property.	*Mitigation Measure No. GEO-3* *Implement Mitigation Measure GEO-2.*	Project Proponent	Prior to issuance of building permits	The City of West Sacramento Community Development Department
Violate any water quality standards or waste discharge requirements.	*Mitigation Measure No. HYD-1* *Prior to issuance of grading permit, the applicant shall obtain a National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), which pertains to pollution from grading and project construction. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to ground disturbance. The SWPPP would incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest extent feasible, adverse impacts to water quality from erosion and sedimentation. A copy of the SWPPP including BMP implementation provisions shall be submitted to the Chief Building Official.*	Project Proponent	Prior to approval of improvement plans	The City of West Sacramento Community Development Department
Otherwise substantially degrade water quality.	*Mitigation Measure No. HYD-2* *Prior to commencement of construction activities, the applicant shall submit proof of permits from the U.S. Army Corps of Engineers and Central Valley Flood Protection Board to the Community Development Department.*	Project Proponent	Prior to approval of grading or improvement plans	The City of West Sacramento Community Development Department
Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	*Mitigation Measure No. NOI-1* *Implement the following construction best management practices to reduce construction noise.* *(a) Standard construction activities shall be limited to between 7:00 a.m. and 7:00 p.m., seven days per week.* *(b) Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.*	Project Proponent	Ongoing during project construction	The City of West Sacramento Community Development Department

DRAFT MITIGATION MONITORING AND REPORTING PLAN FOR THE OPDE SOLAR POWER PROJECT				
Impact	**Mitigation Measure**	**Implementing Party**	**Timing**	**Monitoring Party**
	(c) Construction vehicles shall be required to turn off engines and compressors when not in operation for more than ten minutes. *(d) Where reasonable, avoid hammer drilling; use core bits, instead.* *(e) Where possible, avoid using powder-actuated fasteners; use concrete screws, instead.* *(f) Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible, which could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible.* *(g) Stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed within temporary sheds, or insulation barriers or other measures shall be incorporated to the extent feasible.*			

REGULAR MEETING OF THE
CITY OF WEST SACRAMENTO
PLANNING COMMISSION
August 5, 2010
Minutes

The regular meeting was called to order at 6:03 PM in the Council Chambers, 1110 West Capitol Avenue, West Sacramento, California. Commissioner Blackburn was absent. All other commissioners were present. Chairperson Sandeen presided.

The Pledge of Allegiance was led by Commissioner Charles Moore.

Entry No. 1
Heard General Administration Functions as follows:

City Planner Rikala informed the Commission of three items of correspondence before them pertaining to the OPDE Solar Conditional Use Permit; a petition by a group of residents in relationship to item #2, the OPDE Solar Conditional Use Permit; and a memorandum on item #3, the Liquor Barn Conditional Use Permit.

Commissioner Liebig disclosed that he had conversations with the applicants and the real estate broker both before and after the last meeting regarding item No. 3, the Liquor Barn Conditional Use Permit.

Commissioner Moore disclosed that he had conversations with the applicants and citizens for item No. 3, the Liquor Barn Conditional Use Permit.

Commissioner Morazzini disclosed that he had conversations prior to the last meeting with regard to item No. 2, OPDE U. S. Corp. Conditional Use Permit and has had no conversations with Mr. Breem since that time.

Entry No. 2
Acted on the Consent Agenda as follows:

Approved the minutes of the July 15, 2010 regular Planning Commission meeting.

MOTION: Chris Ledesma. SECOND: Moore. AYES: Galvan, Liebig, Morazzini, Sandeen. NOES: None. ABSENT: Blackburn

Entry No. 3
Opened the continued public hearing regarding Ordinance 10-4 on the proposed OPDE U.S. Corp. Conditional Use Permit No. 10-3. Heard from the following:

NAME	REPRESENTING/COMMENTS
Gregg Breem	Applicant (OPDE) / Had a public meeting on August 2, 2010 to address public questions. Revised plans for overhead power lines. He expects to hear from PG&E by August 27th and does not anticipate problems with undergrounding power lines. The trackers will be lowered. Swainson 's Hawk issues will be mitigated. Toxicity of trackers, restroom facilities for employees, fencing, and security issues were addressed.

Bruce Barnett	Biologist/The current value of the Swainson 's Hawk habitat is low to marginal and measures should be taken to make the area a more valuable habitat. Improvements to the Swainson's Hawk habitat will also attract other species.
Matt Rose	Himself/Pleased with OPDE's response to community issues. He would prefer the trackers to be less visible and/or the tilt adjusted to decrease their visibility. He is still concerned about how the project will affect the resale value of his home.
Lan Ho	Herself and Manpower Professional/She feels the project will bring employment to the area.
Jim Pachl	Friends of the Swainson's Hawk/ He would like more trees planted in the area. He does support the California Department of Fish and Game's recommendations.

It was motioned and seconded to certify the Mitigated Negative Declaration. Approved the Conditional Use Permit with modifications to recommended conditions #5 and #6 regarding undergrounding of utilities and Swainson's Hawk mitigation; and added new condition #7 regarding new fencing plan. Approved mitigation monitoring and reporting program.

MOTION: Ledesma. SECOND: Liebig. AYES: Galvan, Moore, Morazzini, Sandeen. NOES: None ABSENT: Blackburn

Entry No. 4
Opened the continued public hearing regarding the proposed Liquor Barn Conditional Use Permit No. 10-5. Heard from the following:

NAME	REPRESENTING/COMMENTS
Inderjit Grewal	Applicant / Stores are professionally run, will employ residents, and bring revenue into the community. They are well lit and secure. They do not tolerate transients or loitering.
John Siden	Resident/Feels that the Liquor Barn is not the best use of property at that location and feels the Liquor Barn would be better suited for another location. He asked that the commission deny the project.
Jay Richter	Broker for Liquor Barn/Supports the project.
Matthew Horton	Self/He supports the Liquor Barn and feels it would be good for the community.

Certified that the Planning Commission has determined that the Class 1 Categorical Exemption (Existing Facilities) is the appropriate level of environmental review under CEQA and finds that the Exemption represents the independent judgment of the City. Denied the requested Conditional Use Permit (CUP) for the Liquor Barn project based on the inability to make all of the required findings as presented in the staff report.

MOTION: Morazzini. SECOND: Galvan. AYES: Ledesma, Liebig, Moore, Sandeen.
NOES: None. ABSENT: Blackburn

Entry No. 5
Opened the public hearing on Ordinance 10-12 amending Chapter 17.14 of the Municipal Code making various changes to the Zoning Administrator Function. Hearing from no one, closed the public hearing, adopted Planning Commission Resolution 10-08 recommending the City Council adopt Ordinance 10-12.

MOTION: Moore. SECOND: Ledesma. AYES: Galvan, Liebig, Morazzini, Sandeen.
NOES: None. ABSENT: Blackburn

The meeting adjourned at 8:20 pm.

_____
Steve Rikala, Planning Commission Secretary

Minutes approved as presented by a majority vote of the Planning Commission on August 19, 2010.

_____
Steve Rikala, Planning Commission Secretary

Notice of Determination

To: ■ Office of Planning and Research
For U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044
Street Address: 1400 Tenth St.

■ County Clerk
County of: Yolo
Address: 625 Court Street, Room B01
Woodland, California 95695

From: (Public Agency) City of West Sacramento
Address: 1110 West Capitol Avenue
West Sacramento, CA 95691
Contact: David W. Tilley, Senior Planner
Phone: (916) 617-4645

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21052 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2010062026

Project Title: OPDE US CORP. Conditional Use Permit

Project Location (include county): City of West Sacramento, Yolo County

Project Description: The project consists of a 24 megawatt solar power plant to be located adjacent to and east of the Deep Water Ship Channel navigation levee on land leased from the Port of West Sacramento. Approximately 1,920 single axis trackers would be installed over four sites. Each tracker would have approximate dimensions of 23 feet by 46 feet with a maximum height of ±15 feet. During the winter months the trackers would be placed at an angle of 35 degrees, which results in a total height for each tracker of 16.38 feet above the proposed grade. During the summer months the trackers would be placed at an angle of 23 degrees, which results in a total height for each tracker of 13.55 feet above the proposed grade. Each tracker would be mounted on a concrete base. Fill is proposed to bring each site up to a 267-foot elevation. The sites would be interconnected via overhead power lines with each site individually connected via underground conduit. The new overhead power lines would connect to existing overhead lines north of the project site that cross the Deep Water Ship Channel and tie into an existing PG&E substation located at 3000 Ramco St.

This is to advise that the ■ Lead Agency or ☐ Responsible Agency has approved the above described project on August 5, 2010 and has made the following determinations regarding the above described project:

1. The project [☐ will ■ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ■ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [■ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [■ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐was ■ was not] adopted for this project.
6. Findings [■were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the Negative Declaration, is available to the General Public at: 1110 West Capitol Avenue, West Sacramento, CA 95691

Signature (Public Agency) D Tilley Title Senior Planner

Date August 6, 2010

Date received for filing at OPR:

RECEIVED
AUG 09 2010
STATE CLEARING HOUSE